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## Note on the calculation of rails in relation to high train speeds,

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In an article published in August 1921 in the *Bulletin of the International Railway Congress Association* Mr. R. Desprets discussed the differences noted by Mr. Wasiutynski, between the deflection of rails as shown by the tests on the Warsaw-Vienna railway and calculated by means of the Zimmermann formulæ which differences can be ascribed on the one hand to the values taken for the ballast coefficients in the calculations not being correct and, on the other, to the theory of Schwedler on which the Zimmermann formulæ are based not corresponding closely enough with the real facts. Mr. Desprets then went on to investigate the action of the loads on the rails, taking the load as acting on an infinite number of sleepers instead of on four as in Schwedler's first hypothesis or on three as in his second.

Without making a detailed study of Mr. Desprets' learned article, we propose to bring into evidence the decisive importance in the results of the calculations of the value of the ratio  $\alpha = \frac{P'}{P}$  between the

load  $P'$  to be used in the formulæ and  $P$ , the static load carried by the wheels. The value of  $\alpha$  incontestably increases with the speed of the trains and it can be stated that for modern railways with intense traffic this factor has great importance, so great that the alteration in the results due to more complex hypotheses than those of Schwedler can be considered as secondary and negligible as compared to the modification resulting from variations in the value of  $\alpha$ .

In other terms, we consider that the rails can be calculated using Zimmermann's approximative formulæ by introducing therein suitably chosen values for the live load  $P'$  greater than the static load  $P$ . This argument is based on the old tests made by Brière (1), by Considère, and by Weber (2).

The object of the present note is to determine what should be the value of  $P'$  in the different cases that should be intro-

(1) *Revue générale des chemins de fer*, 1883.

(2) WEBER: *Die Stabilität des Gefüges des Eisenbahngleises*.



duced into the Zimmermann formulæ.

The Schwedler hypotheses mentioned above are as follows :

*First hypothesis.* — The load  $P'$  considered as stationary acts at the middle of a span. Its effect does not extend beyond the outer bearings of the nearby spans, so that the rails can be considered as being cut at the same ends. The supports are taken as being elastic and between the reactions and the thrusts on the bearings the known ratios of proportionality of Winkler are supposed to exist.

The simple application of the equation of three moments gives us the formula :

$$M_B = \frac{4\gamma - 3}{4\gamma + 10} \cdot \frac{P'd}{4}$$

in which :

$M_B$  is the moment at the bearings of the loaded spans,

$d$  is the distance between sleepers,

$$\gamma = \frac{6EJ}{Dd^3},$$

$E$  is the modulus of elasticity of the metal of the rails,

$J$  is the moment of inertia of the rails,

$D = 0.9 Cbl$  approximately,

$C$  = the coefficient of the ballast,

$b$  = width of the sleepers,

$l$  = length of the sleepers.

*Second hypothesis.* — Static weight  $P'$  applied at a sleeper : influence of the weight limited to the two adjacent spans.

We get :

$$M_B = \frac{\gamma}{3\gamma + 2} \cdot P'd.$$

The greatest stress is found by considering the spans as loaded alternatively with the weight  $P'$  at their centre.

The moment at the middle section of an intermediate loaded span is given by :

$$M = \frac{8\gamma + 7}{4\gamma + 10} \cdot \frac{P'd}{4} \dots (1)$$

This result is obtained by means of the simplifying hypotheses in question, which result in the supposed static stress being appreciably different from the real dynamic stress.

If it is desired to develop in all its complexity the solution of the problem, the force  $P$ , variable as a function of the time, should be considered as being in movement with the speed  $V$  of the train and the differential equation representing the dynamic equilibrium between the applied forces, the elastic reaction of the rails, the inertia forces and the reaction of the ground would have to be developed.

Even supposing the bearing of the rails as continuous throughout their length which would be incompatible with the objects of this investigation, it would be necessary to integrate a differential equation of the fourth degree with partial derivatives (1).

This shows the analytical difficulties of solving the problem by integration and which make it practically impossible. From the practical point of view it will be better to limit ourselves to the statical problem by accepting the formula (1) as the solution and by introducing for  $P'$  the value of the static load increased by the following values :

*On a straight section of line :*

1. Vertical component of the oblique thrust exerted by the connecting rods;
2. Centrifugal force due to the curvature of the rails in the vertical plane;

(1) See CORINI, « La velocità limite sulle ferrovie », (Boll. del Collegio Nazionale Ingegneri Ferroviari Italiani).



3. Forces due to abnormal movements of the locomotive; *a & b*

4. Vertical component of the inertia force of the unbalanced masses.

*In addition, on curves :*

5. Stresses set up by the part of the centrifugal force not balanced by the component of the weight due to the super-elevation.

6. Stresses due to the gyroscopic moments.

The result should be multiplied by a suitably chosen constant taking into account the dynamic nature of the load.

1. *Normal component of the force exerted through the connecting rod.* — In steam locomotives this component is given by

$$F = \pi \tan \beta \dots \dots (2)$$

if  $\pi$  is the force transmitted by the piston to its rod, and  $\beta$  the angle the rod makes with the centre line of the cylinder.

The angle  $\beta$  being small the equation can be written in the approximate form :

$$F = \pi \sin \beta \dots \dots (3)$$

Now  $\sin \beta = \frac{r}{\lambda} \sin \alpha$

if  $r$  is the radius of the driving crank pin,  $\lambda$  is the length of the rod and  $\alpha$  is the angle the crank pin makes with the centre line through the cylinder.

The equation (3) then becomes :

$$F = \pi \frac{r}{\lambda} \sin \alpha \dots \dots (4)$$

The tractive effort at the tread of the tyre is given by :

$$T = \frac{M}{R} = \frac{\pi r}{R} \left( \sin \alpha + \frac{1}{2m} \sin \alpha \right) \dots (5)$$

wherein  $R$  = the radius of the wheel and

$$m = \frac{\lambda}{r}$$

The maximum value  $T_1$  of  $T$  corresponds to the value of  $\alpha$  which satisfies the equation

$$\frac{dT}{d\alpha} = 0.$$

Supposing  $\pi = S \cdot p$ , in which  $p$  represents the average between the differences of pressures on the two faces of the piston and  $S$  the area of the pistons, and consequently  $\pi$  constant, we have :

$$\cos \alpha + \frac{1}{m} \cos 2\alpha = 0$$

whence :

$$\cos \alpha = -\frac{m}{4} \pm \sqrt{m^2 + 8}.$$

When :

$$m = 5, \quad \alpha = 82^\circ 31' \quad \text{et} \quad T_1 = \frac{\pi r}{R} \cdot 1.015,$$

$$\text{or approximately } T_1 = \frac{\pi r}{R}.$$

But for locomotion we must have :  $T_1 \leq f \cdot 2P$ , wherein  $2P$  is the load on the axle. Then :

$$\pi \frac{r}{R} \leq 2fP$$

whence :  $\pi \leq 2 \frac{R}{r} fP$

and substituting this value in (4) we get :

$$F \leq 2 \frac{R}{\lambda} fP \sin \alpha \dots \dots (6)$$

The maximum value of  $F$  is consequently :

$$F_1 = 2 \frac{R}{\lambda} fP \sin \alpha \dots \dots (7)$$

When  $\frac{R}{\lambda} = \frac{1}{3}; f = \frac{1}{5},$

we should have :

$$F_1 = 0.1332P.$$

2. *Centrifugal force due to the curvature of the rail.* — The rail supporting the weight  $P$  at the middle of the loaded spans (one out of two) deflects and the radius of curvature of the elastic curve at the point of application of the weight  $P$  is given by :

$$\rho = \frac{EJ}{M}$$

This gives rise to a centrifugal force represented by :

$$F_2 = \frac{P}{g} \cdot \frac{V^2}{\rho} \dots \dots (8)$$

wherein  $V$  is the speed of the train and  $g$  the acceleration due to gravity. If for  $M$  we use formula (1) of Zimmermann, taking  $F_2$  into account, we get :

$$M = \frac{8\gamma + 7}{4\gamma + 10} \cdot \frac{d}{4} (P + F_2).$$

Then :

$$\rho = \frac{4(4\gamma + 10) EJ}{(8\gamma + 7)d(P + F_2)} \dots (9)$$

And equation (8) becomes :

$$F_2 = \frac{P}{g} V^2 \frac{(8\gamma + 7)d(P + F_2)}{4(4\gamma + 10)EJ}$$

And finally :

$$F_2 = \frac{\frac{P}{g} V^2 \frac{8\gamma + 7}{4\gamma + 10} \cdot \frac{d}{4} \cdot \frac{P}{EJ}}{1 + \frac{P}{g} V^2 \frac{8\gamma + 7}{4\gamma + 10} \cdot \frac{d}{4} \cdot \frac{1}{EJ}} (10)$$

Applying this formula to the case in which the track is of the 46<sup>3</sup>FS type, taking  $C = 10$  kgr. per  $\text{cm}^3$ , we get :

$$\begin{aligned} D &= 28\,000 \text{ kgr. par cm.}, \\ E &= 2 \times 10^6 \text{ kgr. par cm}^2, \\ J &= 1\,560 \text{ cm}^4, \\ d &= 70 \text{ cm.}, \\ \gamma &= 1.94. \end{aligned}$$

When  $g = 981$  cm. per  $\text{sec}^2$ ,  $V = 108$  km.

an hour = 3 000 cm. a second,  $P = 10\,000$  kgr., we get :

$$F_2 = 704 \text{ kgr.} = 0.0704 P.$$

When  $V = 162$  km. an hour = 4 500 cm. a second,  $F_2 = 0.184 P$ .

When  $V = 216$  km. an hour = 6 000 cm. a second,  $F_2 = 0.32 P$ .

3. *Force due to abnormal movements of the locomotive.* — Two cases must be noted : a) action of the motors on the frame; b) influence of the condition of the track.

a) *Action of the motors on the frame.* — In the case of the electric locomotive, the motors and driving gear can be so arranged that any abnormal actions on the frame balance out. In the case of the steam locomotive the action causing parasitic movements is the vertical component of the force transmitted by the piston rod to the crosshead and to the connecting rod.

Let us consider a two cylinder simple expansion locomotive. On each side there is a vertical force as given by formula (6) : in effect, the said force applied to the frame is equal and opposite to the vertical component of the force transmitted by the rod to the driving wheel or for one side of the frame :

$$V_1 \leq 2 \frac{R}{\lambda} P \sin \alpha$$

and for the opposite side :

$$V_2 \leq 2 \frac{R}{\lambda} P \cos \alpha.$$

There is therefore a vertical force, acting through the centre of gravity, of :

$$V = V_1 + V_2 \leq 2 \frac{R}{\lambda} P (\sin \alpha + \cos \alpha) (11)$$

a moment acting in the centre plane :

$$\mu = V_1 l_1 + V_2 l_2 \dots (12)$$



$l_1$  and  $l_2$  being the distances from the crossheads to the elastic centre and a moment in the transverse plane :

$$\alpha' = (V_1 - V_2)e \dots (13)$$

$2e$  being the distance between the centres of the cylinders.

The maximum value of  $V$  is given when

$$\frac{d}{d\alpha}(\sin \alpha + \cos \alpha) = 0$$

that is to say when

$$\sin \alpha - \cos \alpha = 0, \text{ or } \alpha = 45^\circ.$$

We then get :

$$V_{\max.} = 2 \frac{R}{\lambda} fP \times 1.41 \dots (14)$$

The force  $V$  passing through the centre of gravity (supposing the elastic centre as situated on the vertical through the centre of gravity) gives rise to a vibratory movement defined by (1) :

$$Z = -\frac{\nu}{m^2}(1 - \cos mt)$$

when we consider an average value of  $V_m = 0.7 \frac{R}{\lambda} fP$  and we make :

$$\nu = -V \frac{g}{Q}$$

$$m^2 = \frac{2 \sum \frac{\delta_n^2}{i_n} - h(Q_s - V)}{\frac{Q_s}{g}(\rho_p^2 - kh)}$$

$$Q = 71.8 \text{ t.},$$

$$Q_s = 63 \text{ t.},$$

$$2R = 1.630 \text{ m.},$$

$$\lambda = 4.89 \text{ m.},$$

$$2P = 14.8 \text{ t.},$$

$$L = 11.675 \text{ m. (total length of the locomotive),}$$

$$i = 10 \text{ mm. per t.},$$

$$\delta_1 = 3.73 \text{ m.};$$

$$\delta_4 = 1.82 \text{ m.};$$

$$h = 1 \text{ m.}$$

$$\delta_2 = 1.82 \text{ m.};$$

$$\delta_5 = 4.42 \text{ m.},$$

$$\rho_p^2 = 12 \text{ m}^2.$$

in which  $Q_s$  is the sprung weight,

$\delta_n$  = the distance of the  $n^{\text{th}}$  axle from the vertical passing through the centre of gravity,

$i_n$  = the flexibility of the springs of the axle,

$h$  = the height of the centre of gravity of the spring borne weight above the plane of the springs,

$\rho^p$  = the radius of inertia of the spring borne weight in relation to the transversal axis,

$k$  = the horizontal reaction of the frames against the axle boxes.

The half amplitude of the movement of vibration is given by  $Z_1 = \frac{\nu}{m^2}$ . To the relative half amplitude and to a compression of the springs there corresponds an extra load on the axles given by :

$$\varphi = \frac{2Z_1}{i} \cdot 2n = \frac{4nZ_1}{i}$$

if  $i$  is the flexibility of the springs.

This force  $\varphi$  is divided between the different axles. If the distribution was by equal parts, we should have :

$$2F'_{3,a} = \frac{\varphi}{n} = \frac{4\nu}{im^2} \dots (16)$$

in which  $n$  is the number of axles.

Applying this formula to the type 743 locomotive of the Italian State Railways, we get :

(1) See CORINI : *Lezioni di Ferrovie*, vol. III.



When  $k = 0$ , we get :

$$V_m = 0.680 \text{ t.}; \gamma = 0.10 \text{ m. per sec}^2; m^2 = 100 \text{ sec}^{-2}; Z_1 = 0.001 \text{ m.};$$

$$\varphi = 2 \text{ t.}; 2F'_{3,a} = \frac{2}{5} = 0.4 \text{ t.}$$

$$F'_{3,a} = 0.027 \text{ P.}$$

In addition we have, approximately :

$$\mu = V \cdot l = \text{constant.}$$

This moment gives rise to galloping. The angle described by the spring carried portion is given by :

$$\theta = \frac{n_1}{m^2_1} (1 - \cos mt) \dots (17)$$

The maximum rotation is measured by :

$$\theta_1 = 2 \frac{n_1}{m^2_1} = 2 \frac{\mu}{2 \sum \frac{\delta^2_n}{i_n} - Q_s h} \quad (18)$$

This rotation gives rise to a vertical deflection of the springs expressed by  $\delta_n \cdot \theta_1$  (always supposing the elastic centre on the vertical through the centre of gravity). If  $\delta$  is the distance of the axle the farthest from the vertical through the centre of gravity, the greatest overload is at once given by the equation :

$$2F''_{3,a} = \frac{2\delta\theta_1}{i} \dots \dots (19)$$

Applying these formulæ to the 743 type of locomotive, the average distance from the crosshead to the vertical through the centre of gravity is given by  $l = 1.5 \text{ m.}$ ,  $\mu = 1.04 \text{ t.}$

We get  $F''_{3,a} = 0.1 \text{ t.} = 0.013 \text{ P.}$  The moment  $\mu'$  can be ignored. Consequently :

$$F_{3,a} = F'_{3,a} + F''_{3,a} = 0.04 \text{ P.}$$

b) *Abnormal movements due to the condition of the track.* — Abnormal conditions of the track can set up all the parasitic movements of the locomotive; but as they

depend on accidental causes they do not lend themselves to calculation.

From normal track condition we get a vibratory movement the form of which depends upon the elastic line of the rails deflected.

If we liken the elastic line of the deflected rail to a parabola having the curvature given by equation (9), the vibratory movement is defined by the following equation (1) :

$$Z = \frac{Q_s}{g} \cdot \frac{V^2}{\rho} \cdot \frac{1}{2 \sum \frac{1}{i_n}} (1 - \cos ay) \quad (20)$$

in which  $y$  is the abscissa of the moving axis.

The half period of the deflection of the springs corresponds to the deflection due to a force equal to the centrifugal force, which is a function of the sprung weight, of the speed  $V$  of the train, and of the radius  $\rho$ .

The maximum deflection is given by

$$Z_{\max.} = 2 \frac{Q_s}{g} \cdot \frac{V^2}{\rho} \cdot \frac{1}{2 \sum \frac{1}{i_n}} \dots (21)$$

The corresponding force is then equal to double the centrifugal force acting on the sprung weight.

But the centrifugal force of the sprung mass has already been calculated for  $F_2$ ; the result is that the vibratory movement makes it necessary to add to  $F_2$  the force

$$F_{3,b} = \frac{Q_s}{ng} \cdot \frac{V^2}{\rho} \dots \dots (22)$$

(1) See CORINI : « Il raccordo razionale fra successive livellette ». (*Il Politecnico*, 1928.)



If we make  $\frac{Q_s}{n} = \beta P$ , where  $\beta < 1$ , the equation (10) will give :

$$F_{3,b} = \frac{(8\gamma + 7) d V^2 \beta^2 P^2}{4(4\gamma + 10) g E J - (8\gamma + 7) d V^2 \beta P}$$

Applying this formula to the cases in question for calculating  $F_2$ , we have,  $\beta$  being taken as equal to 0.8 :

when

$V = 108$  km. an hour,  $F_{3,b} = 0.0524 P$ ;  
 $V = 162$  km. an hour,  $F_{3,b} = 0.146 P$ ;  
 $V = 216$  km. an hour,  $F_{3,b} = 0.236 P$ .

4. *Action of the inertia forces of the driving parts not balanced.* — The inertia of the unbalanced driving parts are known to give rise to abnormal movements of the unsprung parts of the locomotive, namely hunting and nosing. To eliminate or at least reduce these parasitic movements, counterbalance weights are added to the driving and coupled wheels so that the moments of inertia of their mass may be equal and opposite to that of the driving parts. Now this can be done completely as regards the rotating masses. On the other hand in the case of the reciprocating masses, their inertia forces along the centre line of the motion can be balanced, but this gives rise to a new unbalanced vertical force tending to vary the weight on the wheel. For this reason only part of the reciprocating masses are balanced. If  $p_1$  be the weight

of these parts, we balance the part  $\alpha p_1$  in which  $\alpha < 1$ .

The balance weight on the driving wheels for the reciprocating parts, taken as concentrated at a distance  $\rho$  from the centre equal to the driving crank, is exactly  $\alpha p_1$  and for each wheel  $\frac{\alpha p_1}{n}$ .

The vertical component of the corresponding inertia force reaches its maximum value when this counterbalance is on the vertical centre line through the wheel and above the centre itself.

If  $\omega$  be the angular speed of the wheel, the maximum value is given by

$$F_4 = \frac{\alpha p_1}{n g} \rho \omega^2.$$

If the locomotive has a speed of  $V$  km. an hour and if  $R$  is the radius in metres of the driving wheels, we get :

$$2\pi R N = \frac{V}{3.6},$$

wherin  $N$  is the number of revolutions per second.

We have then

$$N = \frac{V}{3.6 \times 2\pi R}$$

whence :

$$\omega = 2\pi N = \frac{V}{3.6 \cdot R}$$

and finally :

$$F_4 = \frac{\alpha p_1}{130 n} \cdot \rho \frac{V^2}{R^2} \dots (24)$$

Applying this result to the 743 type locomotive :

$$p_1 = 200 \text{ kgr.}; \quad \alpha = 0.4; \quad \rho = 0.40 \text{ m.}; \quad R = 0.81 \text{ m.}; \quad n = 4.$$

$$\text{When } V = 60 \text{ km. an hour, } F_4 = 347 \text{ kgr.} = 0.046 P.$$

$$V = 100 \text{ km. an hour, } F_4 = 964 \text{ kgr.} = 0.125 P.$$

$$V = 150 \text{ km. an hour, } F_4 = 2169 \text{ kgr.} = 0.29 P.$$

For speeds of 150 km. an hour and over,  $\alpha$  must be reduced. It should be noted that  $F_1$  and  $F_4$  have always opposite signs.



5. *Action of that part of the centrifugal force, on curves, not balanced by means of the superelevation of the rail.* — The superelevation of the outer rail is calculated, not for the maximum speed, but for a speed intermediate between the maximum and minimum. The Italian State Railways for example, use the following formula :

$$h = \frac{s}{g} \cdot \frac{\frac{V_1^2 + V_2^2}{2}}{\rho}$$

in which

- $h$  = the superelevation,
- $s$  = the gauge,
- $g$  = the acceleration due to gravity,
- $V_1$  = the maximum speed,
- $V_2$  = the minimum speed,
- $\rho$  = the radius of the curve.

The unbalanced part of the centrifugal force of the fastest vehicles is given for each axle by :

$$\varphi = \frac{2P}{g} \cdot \frac{V_1^2}{\rho} - 2P \frac{h}{s} = \frac{2P}{g} \cdot \frac{1}{\rho} \left( \frac{V_1^2 - V_2^2}{2} \right) \quad (25)$$

The centrifugal force of the sprung mass is  $\beta P$ ,  $\beta$  having the meaning given in 3°, b).

The force  $\beta \varphi$  gives rise to a moment, in relation to the elastic centre of the spring gear, expressed by :

$$\mu' = \beta \varphi \cdot h \quad (26)$$

$$V_2 \cdot \frac{s}{2} = 2 \frac{l^2}{i} \cdot \theta_{2\max.} \text{ or } V_2 = 4 \frac{l^2 \theta_{2\max.}}{i \cdot s} \quad (31)$$

Finally the vertical force transmitted to the rail is given by :

$$F_5 = V_1 + V_2 = \frac{R}{\rho} \cdot \frac{V_1^2 - V_2^2}{gs} P + \frac{8l^2}{i \cdot s} \cdot \frac{1}{g} \cdot \frac{V_1^2 - V_2^2}{\rho} \cdot \frac{h\beta P}{2 \frac{l^2}{i} - \beta Ph} \quad (32)$$

Let us apply formula (32) to the 743 type locomotive of the Italian State Railways. When :

$\beta = 0.8$ ;  $V_1 = 100$  km. an hour or 27 m. per sec.;  $V_2 = 50$  km. an hour or 14 m.

in the transverse plane. This moment gives rise to a rolling motion defined by the formula :

$$\theta_2 = \frac{n_2}{m_2^2} (1 - \cos m_3 t) \quad (27)$$

in which

$$n_2 = \frac{\mu'}{\frac{Q_s}{g} \rho^2 p}, \quad m_2^2 = \frac{2 \frac{l^2}{i} - Q_s h}{\frac{Q_s}{g} \rho^2 y} \quad (28)$$

in which  $2l$  is the distance between the springs of an axle. The maximum value of  $\theta_2$  is given by :

$$\theta_{2\max.} = \frac{2n_2}{m_2^2} = \frac{2\mu'}{2 \frac{l^2}{i} - Q_s h} \quad (29)$$

The maximum vertical deflection of each spring is  $l \cdot \theta_{2\max.}$ , corresponding to a force  $\frac{l \cdot \theta_{2\max.}}{i}$ .

The unsprung part of the locomotive transmits to the rail a horizontal force equal to  $\varphi$  and a vertical force  $V_1$  such that :

$$V_1 \cdot s = \varphi \cdot R \quad \text{or} \quad V_1 = \frac{\varphi R}{s} \quad (30)$$

in which  $R$  is the radius of the wheels. The sprung part transmits to the wheels the vertical force  $V_2$ , such that :

per sec.,  $\rho = 1\,000$  m., we get :

$$F_5 = 0.510 t. + 0.890 t. = 1.400 t. = 0.18 P.$$

For  $V_1 = 150$  km. an hour,  $V_2 = 50$  km. an hour,  $F_5 = 0.36 P$ .



6. *Action due to gyroscopic phenonema.*  
— The gyroscopic moment due to the movement of the axle on a curve is given by <sup>(1)</sup>

$$M y = \frac{V_2}{g \rho} \cdot \frac{(1 - \beta) P r^2}{R} \quad (33)$$

in which  $r$  is the radius of inertia of the wheel. The gyroscopic action is equivalent to the addition, to the unbalanced centrifugal force, of a force

$$\psi = \frac{My}{h + R} = \frac{V_2}{g \rho} \cdot \frac{(1 - \beta) P r^2}{R(h + R)} \quad (34)$$

The additional load on the wheel is given by :

$$F_6 = \frac{\psi R}{s} + \frac{8\psi h}{2 \frac{l^2}{i} - \beta Ph} \cdot \frac{l^2}{i \cdot s} \quad (35)$$

Applying this formula to the case considered in 5., we get :

$$F_6 = 0.009 P.$$

To sum up, the value of  $P'$  to introduce

into equation (1) is given by :

$$P' = P \pm F_1 + F_2 + F_{3,a} + F_{3,b} \mp F_4 + F_5 + F_6.$$

The forces  $F_2$ ,  $F_{3b}$ ,  $F_4$ ,  $F_5$  and  $F_6$  are functions of the square of the speed of the train.

The maximum values which can be deduced for the examples given in this article are collected in the table below. It should be stated that the formulæ adopted do not take into account the forces due to friction which involve the use of reduction co-efficients in the formulæ for abnormal movements. Consequently the values of  $F_{3a}$ ,  $F_{3b}$ ,  $F_5$ ,  $F_6$  are instantaneous values which successively diminish :  $F_{3a}$ ,  $F_{3b}$  tend towards values equal to half the instantaneous maximum values and  $F_5$  and  $F_6$  to values equal to two thirds of the instantaneous maximum values (and this because the component  $V_1$  is not a function of  $t$ ). The signs of  $F_1$  and  $F_4$  (always opposite) are selected so that their algebraic sum is positive.

*Values of the forces transmitted by one wheel to a rail.*

Speed, kilometres per hour.	P	$F_1$	$F_2$	$F_{3a}$	$F_{3b}$	$F_4$	$F_5$	$F_6$
100	1	0.133	0.07	0.04	0.052	— 0.125	0.18	0.01
150	1	— 0.133	0.18	0.04	0.146	0.29	0.36	0.02

We have therefore on the straight :  
when  $V_1 = 100$  km. an hour,  $P'_1 = 1.172 P$ ,  
when  $V_1 = 150$  km. an hour,  $P'_2 = 1.53 P$ .

When on a curve of radius  $\rho = 1\,000$  m. and with a superelevation,

$$h = \frac{s}{g} \frac{V_1^2 + V_2^2}{2\rho},$$

we get :

for  $V_1 = 100$  km. an hour,  $P'_3 = 1.36 P$ ,  
for  $V_1 = 150$  km. an hour,  $P'_4 = 1.89 P$ ,

the speed  $V_2$  being supposed equal to 50 km. an hour.

The value of  $P'$  so obtained is multiplied by a co-efficient greater than unity, to take into account the dynamic effect of the load. This co-efficient is a function of the speed <sup>(1)</sup>. Without making a very minute analysis in this direction, we can adopt a co-efficient varying from 1.2 to 1.3 for speeds between 60 and 150 km. an hour.

<sup>(1)</sup> See CORINI : *Lezioni di Ferrovie*, vol. III.

<sup>(1)</sup> See CORINI : « Sollecitazioni dinamiche ». (*Rivista tecnica delle Ferrovie italiane*, 1918.)

The values of  $P'$ , in the four cases considered above, then become :

$$P'_1 = 1.465 P; P'_2 = 1.989 P; P'_3 = 1.700 P; \\ P'_4 = 2.457 P.$$

These results show that the speed of the trains has a primary importance in the calculation of the strength of rails : at 150 km. (93 miles) an hour in the cases dealt with, the load to be considered in calculating the rails is double the static load on the straight and two and a half times it on curves. It is to be noted that in the case of electric locomotives, the forces  $F_1$ ,  $F_{3,a}$ ,  $F_4$ , need not be considered which leads to smaller values of  $P'$  than those calculated for the steam locomotive, and this in the proportion of 0.05  $P$  for speeds of 100 km. (62 miles) an hour and

of 0.2  $P$  for speeds of 150 km. (93 miles) an hour.

In view of the modern tendency to make use of very high speeds, it becomes necessary, when getting out a proposed line of railway, to take into account all the forces which we have considered so as to be able by means of formula (1) to determine the maximum bending moment. But, when this calculation has been made, the determination of the stresses in the rail has not been completed : there still remains the calculation of the secondary stresses, due to the horizontal and transverse forces acting at the level of the rail.

The calculation of these forces, for high speed service, will be dealt with in a special note at a later date.

*Bologna, March 1928.*



## Surface transverse fissures in rails,

By CH. DANTIN.

Figs. 1 to 5, p. 1041 to 1045.

(*Le Génie Civil.*)

I. — DESCRIPTION OF THE DEFECTS. — The question of surface transverse fissures in rails has already been brought before the readers of the *Génie Civil* <sup>(1)</sup>. On many occasions these defects develop on the running surface of the rails and have

the appearance of very fine lines, varying in length up to several centimetres (fig. 1). If we take a vertical section along XY of a fissured rail (fig. 1) we shall find that the surface lines extend inside the head over a width of several

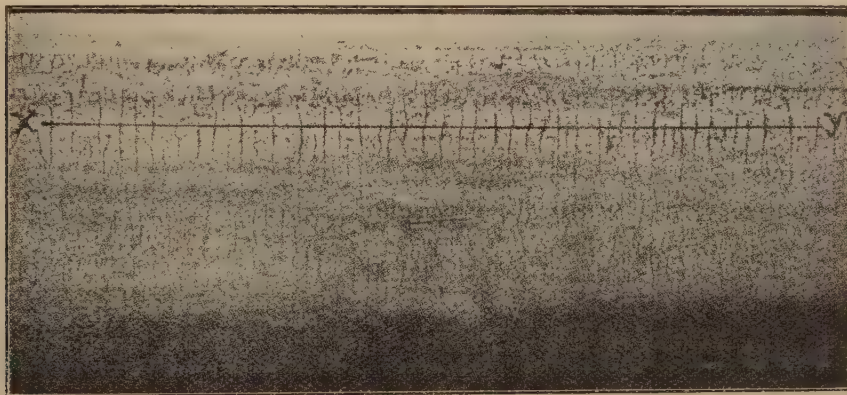


Fig. 1. — Superficial transverse fissures on the running surface of rails.

millimetres, and sometimes several centimetres in depth (fig. 2).

The rail in service is subjected to loads which put the top of the rail alternately into tension and compression, and under

the effect of these alternating loadings, the fissures tend to open and to develop in the mass of the metal and form an equal number of nicks, of extreme sharpness, which can at a given moment cause the

(1) See, in particular : " Nouvelles méthodes d'essais des rails " (New methods of testing rails), by Ch. FRÉMONT (*Génie Civil* of the 13 May 1911, vol. LIX, No. 2, p. 27); — " Sur une cause de rupture des rails " (A cause of rail breakage), by G. CHARPY and J. DURAND (*Génie Civil* of the 18 October 1919, vol. LXXV, No. 16, p. 377, and *Bulletin of the Railway Congress* (January-February-March 1920 number, p. 45); — " Les ruptures accidentelles des rails " (Accidental fractures of rails), by Ch. FRÉMONT (*Génie Civil* of the 22 April 1922, vol. LXXX, No. 16, p. 365).

rail to break when the rail becomes under tension.



Fig. 2. — Extension of the transverse fissures into the interior of the rail head (vertical section along XY of figure 1). Magnified :  $\times 50$ .

As a rule, a relatively small stress is sufficient to cause the fracture.

It has been shewn by tests made at the Neuves-Maisons Works, which will be described below <sup>(1)</sup> that some 46-kgr. per m. (92.73 lb. per yard) rails manufactured in conformity with the standard specification of the principal French Railway Companies, when tested by means of short sections 0.70 m. (27 1/2 inches) long, placed with the head downwards on supports 0.50 m. (19 11/16 inches) apart, stood a drop test

of a 10 m. (32 ft. 9 11/16 in.) fall of a 300 kgr. (660 lb.) tup, whereas pieces cut from the same rails, but having transverse fissures 2 to 3 mm. (0.079 to 0.118 inch) deep, broke under the same test conditions with a fall of 50 cm. (19 11/16 inches).

We are therefore dealing with a very serious defect which is not always easily discoverable in the track, as the trains in passing result in a hammering of the running surface which appears to close up the outer edges of the fissures : the surface has to be polished with emery cloth or a mixture of fine carborundum to make them visible.

II. — METHOD OF FORMATION. — Various theories, given in detail in a recent pamphlet by Mr. V. Sabouret <sup>(1)</sup> have been put forward to explain the formation of these fissures.

The eminent metallurgist Osmond, and after him, Mr. Ch. Fremont, have ascribed it to a phenomenon of self-temper-hardening : under the effect of the violent friction produced by slipping and by skidding, an extremely thin surface layer of the metal becomes raised to a temperature above the critical limit, and is then cooled off sufficiently quickly by conduction for temper-hardening to follow : this superficial hardening sets up a series of incipient fractures capable ultimately of extending into the sound part of the rail.

Other metallurgists, in particular Messrs. G. Charpy and J. Durand, have ascribed the formation of these fissures to cold work hardening.

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(1) "Auto-trempe et écrouissage superficiels des rails en service" (Surface self-temper-hardening and work hardening of rails in service), by Mr. SABOURET, Chief Engineer of Technical Services of the Paris-Orleans Railway (*Revue générale des Chemins de fer*, November 1926). A brief summary of this article appeared in the *Génie Civil* of the 15 January 1927 (vol. XC, No. 3, p. 86). — See also *Bulletin of the Railway Congress*, June 1927, p. 510.

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(1) The *Génie Civil* has already published (see the number of the 7 January 1925, vol. LXXXVI, No. 6, p. 140) an article on "Le traitement thermique des rails aux usines de Neuves-Maisons" (Heat treatment of rails at the Neuves-Maisons Works).



According as we adopt one or the other of these theories, we are led to propose preventive methods or remedies which differ totally, such as: the use, for making rails, of relatively low tensile steel, which will not temper under the effect of slipping (1) or the removal of work hardening effects by heating the surface of the rails by, for example, suitable portable plant (2).

III. — REPRODUCTION OF THE FISSURES BY DELIBERATELY SLIPPING THE WHEELS. — The tests at Neuves-Maisons, to which reference has already been made above, were carried out by the Engineers of the Châtillon, Commentry and Neuves-Maisons Forge Company with the help of the Engineers of the principal French Railway Companies. The object of these tests described at length in the *Revue de Métallurgie* (3) was to determine to what extent the formation and propagation of transverse superficial fissures in rails could be prevented, or at least lessened, either by modifying the chemical composition of the steel used for the rails, or by subjecting the rails, prior to use, to a suitable heat treatment, or even by both methods.

The tests were made on steels of very varied qualities and kinds: Thomas and Bessemer steels; Martin steel of French and of American manufacture; manganese steel; mild and high carbon steels.

The rails rolled at Neuves-Maisons were tested in the « as rolled » condition, that is to say, after the usual cooling in the open air on the floor, or after treatment, that is to say, after undergoing, when coming off the rolls, the patented method of heat treatment of the Châtillon,

Commentry and Neuves-Maisons Forge Company.

In order to solve the problem raised by the Railway Companies, it was necessary to be able to produce at will fissures in the rails under strictly comparable conditions.

With this object in view, the simple and ingenious method developed by Mr. Sabouret, Chief Engineer of the Technical Services of the Paris-Orleans Railway, and put into use at Juvisy in 1924 by Mr. Sevin, Engineer of the Permanent Way Department of the same Company, was adopted.

This method consists in greasing the rails and thereby making an engine coupled to a heavy train or to a number of braked wagons slip. The rails to be compared are placed one opposite the other on a *straight* length of line *without superelevation* so as to avoid any undesired effects that might result either from the curvature or the difference in level of the rails.

It can be taken that rails so laid will undergo identical slipping, so that the effect on rails of different qualities can be compared.

The preliminary tests made it possible to lay down the running conditions under which the locomotives are most likely to cause the formation of fissures: speed of translation 2 to 3 km. (1.2 to 1.9 miles) an hour for a speed of rotation of the wheels of 60 to 80 km. (37 to 50 miles): this is the method of working, called by Mr. Sabouret, the Chief Engineer, « skidding slip », and as far as possible was maintained constant during the whole of the tests.

Surface transverse fissures developed on rails of all kinds and qualities of steel subjected to these slipping tests: in particular, important fissures, very clearly defined, were produced on the surface of mild steel rails of 45 kgr. tensile (28.6 English tons per square inch): figure 3 shews an example of these fis-

(1) Ch. FRÉMONT: 69th Pamphlet: *Usure et défauts des rails* (Wear and defects of rails). Paris, 1924.

(2) G. CHARPY and J. DURAND: Paper before the Académie des Sciences, August-September 1921.

(3) « Les fissures transversales des rails » (Transverse fissures in rails), by H. VIREAUX, (*Revue de Métallurgie*, September-October-November 1927.)

tures. These defects can therefore start without any phenomenon of self-temper-hardening occurring : but simply as the

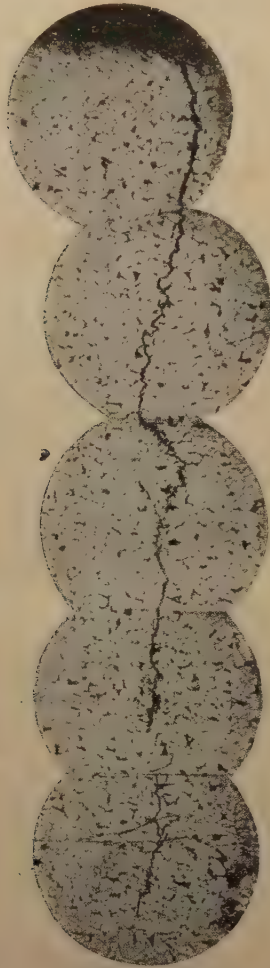


Fig. 3. — Development of the transverse fissures in the rail head in mild steel of 45 kgr. tensile (28.6 English tons per square inch). Magnified :  $\times 50$ .)

result of cold work-hardening; the manner of their formation appears to be as follows : a hard superficial layer, of little

or no ductility, is produced on the surface of the rail, either by self-temper-hardening or by work hardening : this layer hardly yields at all when subjected to tensile stress, and as the mass of the head possesses on the contrary a high co-efficient of elongation, the unyielding superficial layer breaks when the head is extended by the load of the wheels.

Mr. Viteaux in his pamphlet, already quoted, remarks « that as the presence at the surface of the rails of a layer hardened by self-temper-hardening facilitates the formation, as the result of « skidding slips », of very serious fissures, it becomes desirable to avoid the use of hard steels which readily temper-harden in all parts of the line where the rails are liable to very serious and frequent slipping ».

Work hardening alone being able to start the formation of superficial transverse fissures, independently of all self-temper-hardening phenomena, it may be concluded that the use of semi-hard steel, or even of mild steel, in the manufacture of rails, will not completely avoid the formation of these defects.

On the other hand, the Neuves-Maisons tests shew that the fissures can be rendered very much less harmful by subjecting the rails, before laying them, to a suitable heat treatment.

IV. — INVESTIGATION INTO FISSURED RAILS. — In order to bring out the degree of resistance to fracture of the fissured rails, all the rail bars were submitted to alternating drop tests or bend tests.

a) *Drop tests.* — Bars 0.70 m. (27 1/2 inches) long, cut out cold from the rails to be examined, were drop tested with a 300 kgr. (660 lb.) tup with the test pieces supported in accordance with the requirements of the French Railways Standard Specification (bearings 0.50 m. [19 11/16 inches] apart) but with the drop (H) reduced.



The blows given were : First 20 <sup>(1)</sup> with  $H = 0.50$  m. (19 11/16 inches) the first blow rail head down, the second rail head up, the third rail head down, etc.

Then 20 blows with  $H = 1$  m. (39 3/8 inches) placing as before the head of the rail in tension, then in compression, etc.

After the 41st blow, the height of the drop was raised by 1 m. (39 3/8 inches) after each blow, the head of the rail being left in tension.

b) *Bend tests.* — Test pieces 1.50 m. (59 inches) long, placed on bearings 1 m.

(39 3/8 inches) apart, were bent progressively up to breaking in an hydraulic press, the head of the rail always being in tension : the maximum deflections and loads were recorded.

As we stated above, the results of these tests shewed that rails after being heat treated, subjected to the same slipping as non-heat-treated rails, and fissured in the same way, are able to stand much more severe blows and much greater deflections by bending than those under which non-treated rails would break : figures 4 and 5 shew a sample of a *heat-treated fissured rail* that did not

Fig. 4.

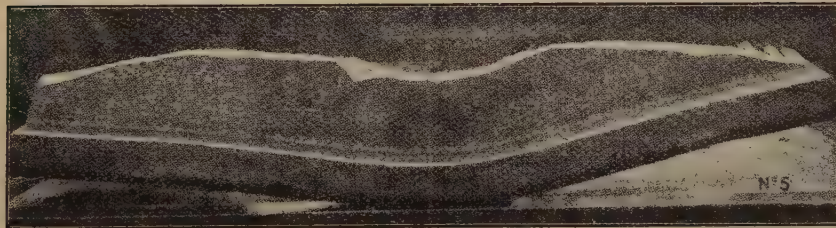
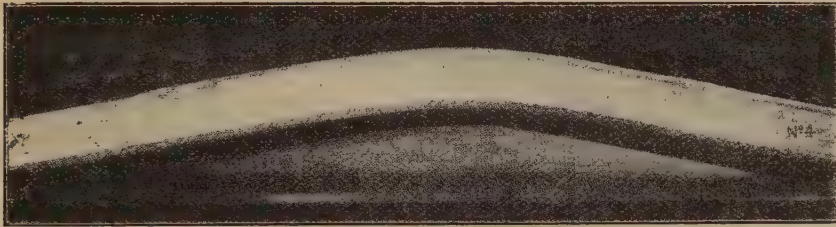


Fig. 5.

Figs. 4 and 5. — Longitudinal views of a fissured rail, heat treated by the Neuves-Maisons process, that under alternating blows did not break through the fissures (fig. 4) but broke longitudinally along the web (fig. 5).

break through the fissures under the drop test : this rail broke longitudinally along the web.

The summary of the drop tests on fissured rails heat-treated and un-treated, is as follows :

*Non-treated rails :*

92 % broke under the 300-kgr. (660 lb.) tup falling from  $H = 0.50$  m. (19 11/16 inches);

2 % stood the blows at 0.50 m. but

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<sup>(1)</sup> In the first tests, 40 blows were given at 0.50 m. and 1 m.

broke with  $H = 1$  m. (39 3/8 inches);

6 % stood the blows at 0.50 m. and 1 m., but broke when  $H = 2$  or 3 m. (78 3/4 or 118 1/8 inches).

*Heat-treated rails :*

1.5 % broke at  $H = 0.50$  m.;

10 % stood the blows at 0.50 m. but broke when  $H = 1$  m.;

69.5 % stood the blows at 0.50 m. and 1 m., but broke at heights of fall of between 2 and 10 m. (6 ft. 3 3/4 in. to 32 ft. 9 11/16 in.);

19 % could not be broken with the 300 kgr. tup falling 10 m.

The bend test confirmed the results of the drop tests.

The conclusion can therefore be drawn that the heat-treatment has considerably increased the resistance of the rails to the growth of the superficial fissures : in addition, we think it possible to deduce from these results that the modification of the texture produced on the rails by suitable heat-treatment, will also hinder the development and render considerably less dangerous the internal transverse fissures, the walls of which, under the alternating tension and compression stresses, shew the characteristic aspect which gave rise to the name « silvery oval marks ». These very serious defects which have already caused many accidents, and which seriously occupy the minds of railway engineers, particularly in the United States, are in every way comparable, if not in their origin, at least by their « acuteness » and their method of propagation, to the transverse superficial fissures of the head of the rail, and it may be presumed that the same remedy will make it possible to effectively overcome faults of the same nature.

In addition to the drop and bend tests, the test pieces from fissured rails have been subjected to micrographic examination and to tensile and resiliency tests.

The investigation as a whole has enabled the following conclusions to be drawn :

V. — CONCLUSIONS. — 1. The superficial transverse fissures of rails are serious defects which are produced when a locomotive slips on a rail, the rolling surface of which has been hardened previously either by self-temper-hardening or by cold-work-hardening : under the tensile stress caused by slipping of the wheels, the non-ductile superficial layer tears; the formation of the fissures is facilitated if the heat caused by the friction of the wheel raises the rolling surface of the rail to a « blue » heat.

2. Whatever may be the initial cause of their formation (self-temper-hardening or cold-work-hardening) the superficial transverse fissures shew themselves under the form of cleavages, very sharp at the bottom, and have, for equal sizes, the same danger.

3. The fissures can occur in steels of all kinds and qualities : they occur more easily and more quickly attain considerable size in a layer of hard steel much temper hardened by violent slipping; but they also appear in mild steel of 40-45 kgr. (25.4 to 28.6 English tons per square inch) tensile and render rails of this grade of steel very fragile unless heat-treated.

4. The micrographic examination of the fissured rails shews that segregation and non-metallic inclusion facilitate the propagation of the fissures, but these fissures also develop in steels of good quality, and really homogeneous steels, and we cannot hope to guarantee completely rails against superficial fissuring by limiting ourselves to carrying still further than is now the case the elimination of impurities, non-metallic inclusions, and segregation.

5. If it is not possible to eliminate completely the formation of transverse superficial fissures by using in the manu-



fracture of rails, very highly purified steels sufficiently soft not to temper-harden under the effect of slipping, it is at least possible to reduce the harmful effects of the fissures to a very considerable extent and to make rails able to resist, even when fissured, much more severe operating conditions than the present ones: in order to obtain this result, it is necessary to act, not only on the composition and the homogeneity of the rail steel, but on the texture, by subjecting the bars on leaving the rolls to an appropriate heat treatment.

The heat treatment of the rails, as actually carried out at the Neuves-Maisons Works, produces in all kinds of steel the modification of the texture required to prevent the propagation of the fissures and to render them, in practice, harmless.

As has been shewn in a previous article <sup>(1)</sup>, it makes it possible, moreover, to use for rail making, semi-hard steels

which, after treatment, have a resistance to wear at least equal to that of non-treated hard rails, and which shew over these latter the following advantages: greater resiliency and less liability to temper-hardening, and consequently to fissuring through self-temper-hardening as a result of slipping.

It will be remembered in this connection that the Neuves-Maisons Works were the first in France to produce heat-treated rails, and are still the only ones fully equipped to treat under proper commercial conditions, the whole of their ordinary output of heavy section rails. The deliveries made to the Railway and Tramway Companies in France alone amount to thousands of tons. The process will shortly be introduced into Italy at the Works of the Ilva Company, the largest makers of rails in Italy which, after a thorough investigation into various competitive methods, finally decided to adopt the Neuves-Maisons process.

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<sup>(1)</sup> « La question de l'acier à rails », (The question of steel for rails), L. THIBAUDIER and H. VITEAUX (*Revue de Métallurgie*, February 1926.)

## The inverted macrostructure in certain lots of rails,

By E. DECHERF,

ENGINEER, "ARTS ET MANUFACTURES".

Figs. 1 to 8, pp. 1049 to 1054.

(*Revue universelle des Mines.*)

For some time the French Railway Companies have had cause for anxiety with regard to the behaviour of rails made of Thomas steel. At the present time the inspection only involves the classic tests, the tensile, and the drop test on a rail with notched head: the date is not perhaps very far off when the macrostructure and the microstructure will be included in the Specifications.

When investigating, or rather, enquiring into the cause of some cracks at the riser in Thomas ingots for rail making, and into the causes of longitudinal lines in the foot or the head of the rail, we came across the inversion of the macrostructure in certain lots of rails, the inversion being revealed by the Baumann test (1).

A cross section of rail perfectly polished when etched with a 3 % sulphuric acid solution generally reveals the figure shewn by the photograph, figure 1. In certain lots, the Baumann test brought into evidence the figure shewn by photograph figure 2. The converter was of the usual 15 t. (14.7 English tons) type; the cast iron when leaving the mixer had, as regards fluidity, a ratio  $\frac{\text{Mn}}{\text{Si}}$  having a value below 3 (a hot cast iron being given the absolute value of the Mn

content); the addition was made by means of low manganese Spiegel (4 to 6 % Mn).

In order to be able to study in a logical manner these anomalies as revealed in the macrostructures, we carried out the following tests:

- a) Tests on macrostructure (arrangement of the fibres);
- b) Investigation of the Brinell hardness variation throughout a cross section;
- c) Chemical composition;
- d) Metallographic tests.

When compared with figure 1, it should be noted that:

1. The impurities are localised in the head and foot; in the head they are concentrated between two concentric elliptical forms; in the foot they appear to have been forced out in the direction of the wings of the foot;

2. A light coloured zone, including the web, and opening out in the head, following an elliptical form, is brought to light.

We have numbered in the natural order of the numbers, the four zones revealed by the etching.

(1) This work was carried out at a steel works in the Longwy district.





Fig. 1. — Usual Baumann test from Thomas rails (the impurities and inclusions are localised in the web of the rail).



Fig. 2. — Abnormal etched figure revealed by the Baumann test.

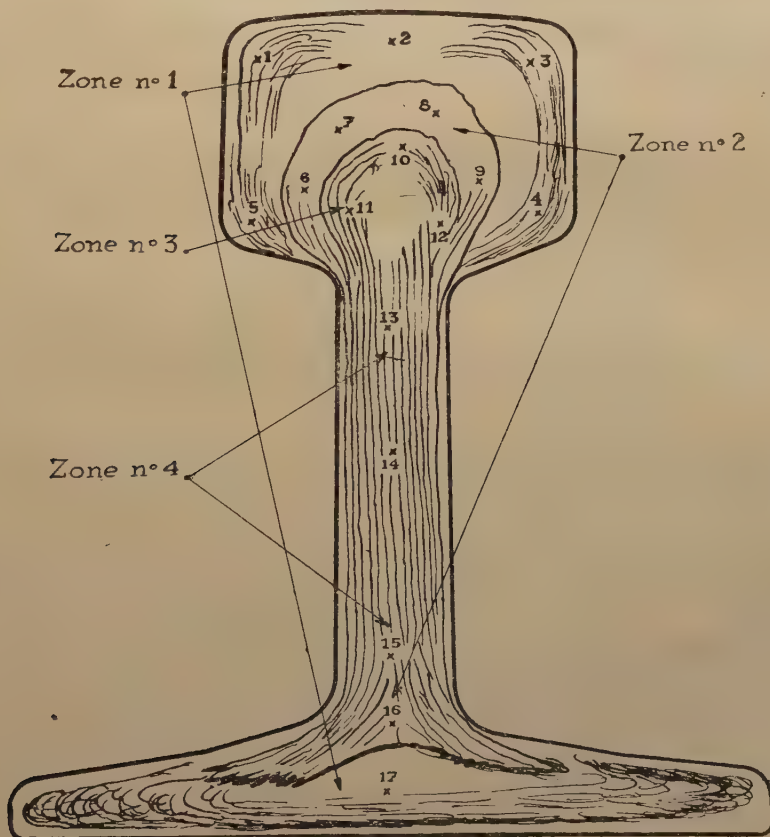


Fig. 3. — Diagram of the macrostructure (internal arrangement of the fibres).

The zone No. 1, is seen to be broken up into two parts, one belonging to the head and the other to the foot.

The zone No. 2, contains the highest content of impurities and is delimited by two lines of elliptical form.

The zone No. 3, close to zone No. 2, from which it is the natural derivation.

The zone No 4, limited to the web of the rail.

The investigations carried out may now be described in detail.

#### A. — Macrostructure tests (arrangement of the fibres).

When confronted by the unusual results of the Baumann test, we wished to

know what corrosion picture would be revealed by Fry's reagent, or in other words, how are the fibres arranged in this case? The sketch of figure 3 reproduces diagrammatically what we found:

1. The arrangement of the fibres is good, both in the web of the rail, as in the head and foot;

2. The zone No. 2 enclosed between two elliptical forms is brought out;

3. The same outer contour of zone No. 2 in the foot is revealed.

In short, in the « arrangement of the fibres » there is nothing abnormal.

#### B. — Investigation into the variation in Brinell hardness.

Diameter of the impression with the 10 mm./3000 kgr. (0.394 inch/6 600 lb.) ball.

Number in order.	Diameter.	Number in order.	Diameter.
1	400 (0.1575 inch).	10	435 (0.1713 inch).
2	405 (0.1594 —).	11	410 (0.1614 —).
3	400 (0.1575 —).	12	450 (0.1772 —).
4	395 (0.1555 —).	13	470 (0.1850 —).
5	400 (0.1575 —).	14	480 (0.1890 —).
6	385 (0.1516 —).	15	450 (0.1772 —).
7	380 (0.1496 —).	16	380 (0.1496 —).
8	385 (0.1516 —).	17	410 (0.1614 —).
9	380 (0.1496 —).		

We made on the cross sections, seventeen impressions with the Amsler machine, using the 10/3 000 (0.394 inch/6 600 lb.) ball.

On figure 3 the positions of the test points are reproduced. The table reproduces the readings of the diameters of these impressions.

The inspection of these figures brings out:

1. The agreement of impression No. 17 with numbers 1, 2, 3, 4 and 5;

2. A greater Brinell hardness in the case of impressions Nos. 6, 7 and 8;

3. A much lower Brinell hardness in the case of impressions Nos. 13, 14 and 15.



If we group together the impressions according to the zones, revealed by the Baumann test, and find the average hardness of the zones, we get the values shewn in the following table :

Average diameter by zones.

Number of the zone.	Number of the impression.	Diameter of the impression.	Average diameter.
1	1	400 (0.1575 inch).	401 (0.1579 inch).
	2	405 (0.1594 —).	
	3	400 (0.1575 —).	
	4	395 (0.1555 —).	
	5	400 (0.1575 —).	
	17	410 (0.1614 —).	
2	6	385 (0.1516 inch).	382 (0.1504 inch).
	7	380 (0.1496 —).	
	8	395 (0.1555 —).	
	9	380 (0.1496 —).	
	16	380 (0.1496 —).	
3	10	435 (0.1713 inch).	426 (0.1677 inch).
	11	410 (0.1614 —).	
	12	450 (0.1772 —).	
4	13	470 (0.1850 inch).	466 (0.1835 inch).
	14	480 (0.1890 —).	
	15	450 (0.1772 —).	

*Remarks.* — The four macrographic zones correspond to four different Brinell hardnesses. It should be noted :

1. that the hardest zone is that which has the highest content in impurities;

2. that the white zone (No. 4) possesses an upper part (zone No. 3) close to zone No. 2, and which by natural derivation has similar qualities to zone No. 2;

3. that the Brinell hardnesses of zones

No. 1 and No. 3 meet the tensile strengths required by the Specifications;

4. that the No. 4 zone is of definitely lower strength;

5. that the zone No. 2 is of clearly higher strength.

To sum up, the rail is heterogeneous. If we shew diagrammatically the resistances on the plane of symmetry of the

rail from the top of the head to the bottom of the foot, we have the curve below. The most serious fact is that the changes are sudden.

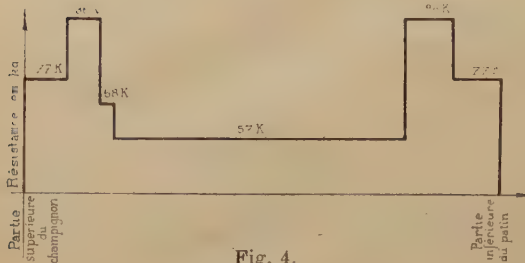


Fig. 4.

Explanation of French terms :

Partie supérieure, etc. . . . . = Top of the rail head.  
Partie inférieure, etc. . . . . = Bottom of the rail foot.  
Résistance en kg. . . . . = Tensile strength in kgr.

### C. — Investigation into the chemical composition.

It was quite reasonable to ask the following question : « Is the difference in Brinell hardness of the four zones of physical or chemical origin »?

The table below gives the result of the average chemical analyses made in the four zones :

Average chemical analysis in the four zones, in per cent.

Number of the zone.	C	Mn	Ph	Si	S
1	0.454	0.730	0.080	0.066	0.050
2	0.562	0.740	0.123	0.038	0.072
3	0.440	0.720	0.066	0.038	0.030
4	0.394	0.700	0.037	0.047	0.022

We note :

1. the same content of Mn in the four zones (the maximum differences of 0.02 % being of the order of error of the analytical method using ammonium persulphate);

2. a great variation of the Ph content

with a maximum content for the zone No. 2;

3. a great variation of the content of S % with maximum content for the zone No. 2;

4. a great variation of the content of C % with maximum content for the zone No. 2 (the analytical method being that of combustion in the electric furnace);

5. the content of Si % is minimum in the zone No. 2;

6. the zone No. 2 contains more iron sulphide than the others, in view of the similarity of the Mn contents;

7. the zones No. 1 and 3 agree with the normal analyses of rails of this sort.

To sum up, the heterogeneity of the rail is of chemical order.

### D. — Metallographic investigations.

In order to carry the investigation of the matter still further, micrographic examinations of the four zones were made. The polished sections were etched by a 4 % solution of picric acid in alcohol. The enlargement is equal to 218 diameters.

The photographs below (figs. 5 to 8) simply corroborate the information collected from the preceding investigations. The structures resulting from overheating, are more pronounced in zones 2 and 3 than in the others.

### Conclusion : Hypothesis.

Can a conclusion be drawn, or at least, can a hypothesis be formulated, as a result of this investigation ?

The characteristic of fluidity of the molten iron for conversion  $\left( \text{ratio } \frac{\text{Mn}}{\text{Si}} \right)$  is without influence, as we have found for the same values of this ratio, lots of rails in every way normal. In our opinion, we are dealing with ingots taken out of the moulds too soon.



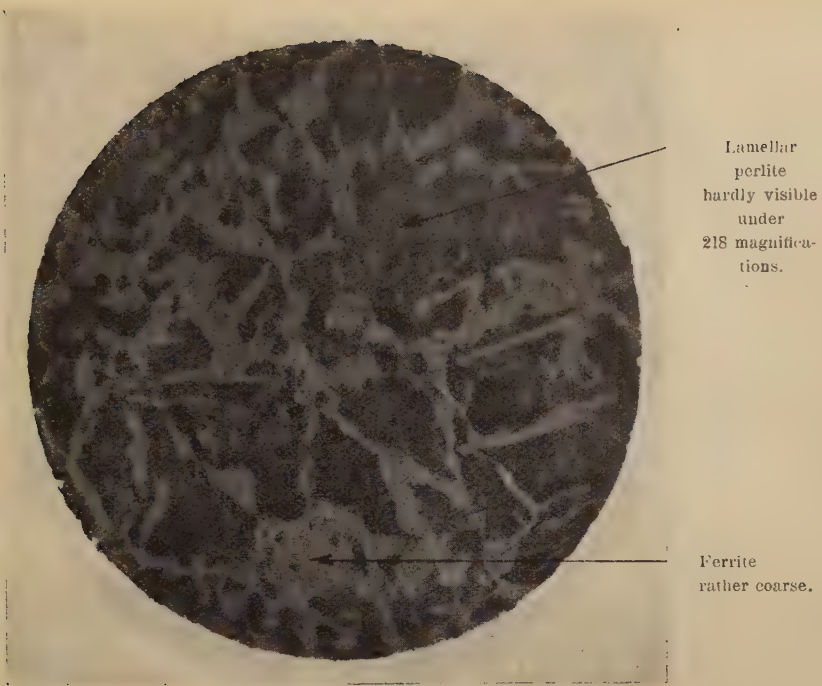
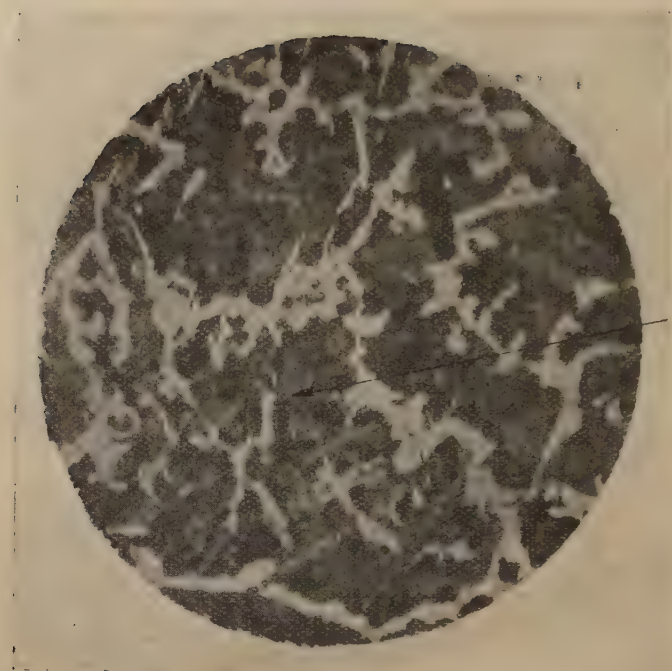


Fig. 5. — Average microstructure of the zone No. 1.

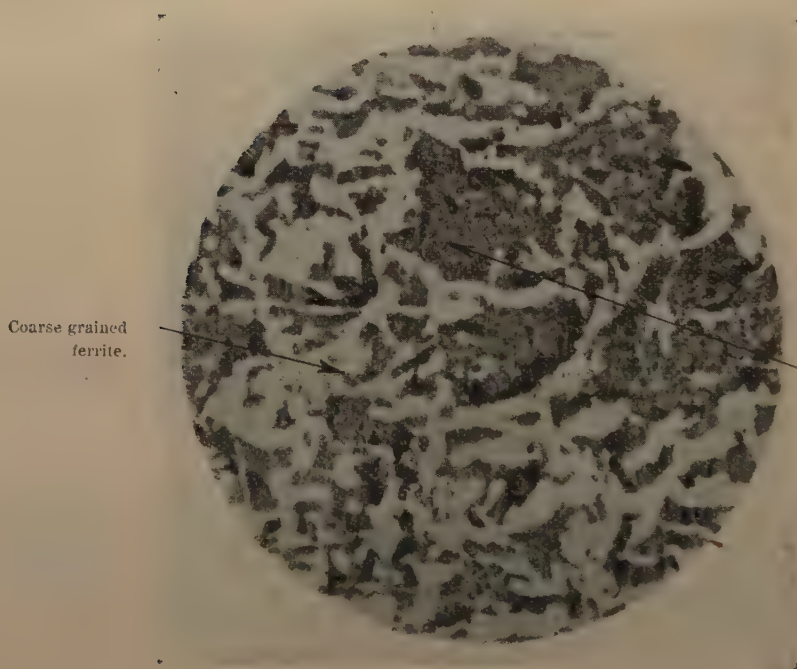


Fig. 6. — Average microstructure of the zone No. 2.



Lamellar  
perlite  
hardly visible  
under  
218 magnifica-  
tions.

Fig. 7. — Average microstructure of the zone No. 3.



Coarse grained  
ferrite.

Lamellar  
perlite

Fig. 8. — Average microstructure of the zone No. 4.



Such ingots have actually two quite distinct zones :

*a)* a peripheral part already solidified (solidus);

*b)* a centre core still liquid (liquidus).

During rolling, the ingots with « liquidus » have a tendency to swell; this expansion is due to the fact that the liquidus (which contains at once some liquid steel and occluded gases such as CO and H) does not yield to the pressure of the peripheral crust : consequently the latter is subjected to considerable pressure which causes it to swell out on leaving the rolls. To make use of a simple comparison, it is the phenomenon of the India rubber bulb which one squeezes and then releases suddenly.

But as the rolling continues the pressure makes itself more and more felt near this zone, and there occurs a moment at

which, under the action of the gases, the central liquid zone subjected to the pressure is driven out towards the extreme parts (the head and the foot) taking with it the inclusions which are always found, in large part, localised in the hottest part of the ingot.

In addition, the circumferential appearance of the zone No. 3 appears to confirm this theory, as under the action of a gaseous pressure the natural form of the material is the sphere or ellipsoid having circular or elliptical plane sections.

The web of the rail, having a lower carbon content, possesses in consequence great resiliency, and will stand up better to the drop test. On the other hand, the spreading of the running surface of the rail in service is to be feared. It is within our knowledge that this has occurred on one of the large French railways.

## Wood, metal, and reinforced concrete sleepers, compared, <sup>(1)</sup>

By Mr. VINCENT,

ENGINEER IN CHARGE OF NEW WORKS OF THE NORTH EAST LIGHT RAILWAYS COMPANY (FRANCE).

Figs. 1 to 8, pp. 1059 to 1070.

*(L'Industrie des voies ferrées et des transports automobiles.)*

The constantly increasing cost of wood sleepers and also in some cases the difficulty experienced in obtaining large quantities of these sleepers, especially for standard gauge lines, has led most railway and tramway companies to consider the question of suitable rail supports to take their place, having the same characteristics technically but cheaper in price and more easily obtainable.

It must be admitted that the search has been going on for a long time, and that from the early days of railways some Engineers considered the use of iron sleepers, this metal at the time being the only material available that could be used as a substitute for wood, for this purpose.

Until 1914 however, the French railway systems with few exceptions took very little action in the matter. The wood sleeper had been thoroughly tried out over a long period and almost completely met all technical requirements. From the point of view of cost, it did not appear probable that there could be any serious competitor. The tests, although numerous, carried out in France and abroad to find a substitute, were not, at least at first, very encouraging, and it

did not appear certain that the extra outlay, due to the higher cost price, could be recovered by the longer life of the metal sleepers. These tests moreover were made with very varied types of sleepers some of most complicated form, difficult to manufacture, and consequently very expensive. The rail fastening in particular had caused considerable dissatisfaction.

None the less, forty years ago several types of metal sleepers were made which gave satisfactory results. The rail fastening was fairly simple and robust, and it was felt that the period of trial was over. In France however, the relatively high cost of metal sleepers, as compared with wood, prevented their general use: in other countries, having greater steel production, their use developed, as was the case in some colonies and tropical countries where they were used advantageously to replace wood sleepers readily destroyed by insects and the climatic conditions.

Subsequent to 1900, the great vogue of reinforced concrete, and the valuable results obtained by its use in the most varied types of construction, led certain people engaged in developing the use of this material to make tests of reinforced

<sup>(1)</sup> Report presented the 14th General Technical Meeting of the "Union des voies ferrées et des transports automobiles" (Marseilles, 6, 7 and 8 November 1927).



concrete sleepers which ought to have a very long life as a result of the strength of this material and above all of its resistance to atmospheric agents.

The first tests made with sleepers of the same form as wooden ones were not successful : a large number broke, either under the rails, or at the centre : others disintegrated very quickly : the rail fastening was found to be defective, and before the war we did not appear to have arrived at a type of concrete sleeper sufficiently robust to compensate by its longer life, the higher cost price as compared with that of wood sleepers.

The latter therefore, continued to be preferred by the railways, and the light railway systems especially, continued to use them almost exclusively : the tests that were made with other sleepers were too costly to be undertaken by these companies on a large scale and the time, necessarily several years, that must elapse before any accurate conclusion could be drawn, justified the caution shown as regards alterations to the patterns in use, before a definite opinion had been pronounced on the good and bad qualities of such sleepers.

Finally the annual consumption of wood sleepers although big, did not appear likely to endanger the future of our forests.

After the war, the economic conditions were completely upset in all countries. In France especially, the destruction of the forests in the war area and in the occupied territories, the heavy cutting in the other forests during the war, and the years immediately after it, lead to a shortage of wood accompanied naturally by a considerable rise in price. In addition, nervousness was felt as to the future of the national forests which was being seriously affected by exploiting them in this way.

The normal yearly consumption of sleepers in France being at the present time about 6 000 000 the corresponding volume of wood converted is about

500 000 cubic metres (17 500 000 cubic feet) part of which furthermore had to be imported.

This situation was really serious and it became a matter of urgency to meet it by replacing, as far as possible, wood sleepers by metal, or reinforced concrete sleepers.

The replacement appeared even more desirable, as the steel makers took special steps to reduce the cost price of rolled steel for sleepers, whereas the price of wood continued to increase. As far as reinforced concrete was concerned, the many purposes for which it had been used in the war, and the great advance in knowledge of its use, made it reasonable to hope that we should succeed in getting cheaper sleepers of this material which would at the same time meet all requirements as to strength and durability.

The principal French Railway systems have therefore in recent years on a grand scale put into service two types of sleeper. At the present time the number of metal sleepers in use in France amounts to several millions, whilst several hundred thousand concrete sleepers have been put down or are in course of manufacture.

The light railway systems have also decided to follow the same lines : several of them have in service, or on order more than 10 000 reinforced concrete sleepers per company. The use of metal sleepers as a general rule more restricted, is also growing.

We will not describe the different patterns of sleepers that have been designed, most of which were quickly abandoned: detailed descriptions are to be found in the technical press, and the Railway reviews contain numerous examples.

Unfortunately, some of these designs and particularly as regards reinforced concrete sleepers, described with every detail by their inventors, have not given in service, the results the ingenuity of their design had led one to expect and

their complexity may have been one of the causes of their lack of success.

We will now shortly describe the principal characteristics of the types which at the present time seem likely to give the best results from the technical and economic points of view, and give at the same time, a resumé of the information supplied by the light railway companies using them.

### Metal sleepers.

Sleepers, whatever they may be made of, have to do two things :

1. Distribute over the ballast the pressures transmitted from the wheels of the vehicles;
2. Tie together the rails.

The causes of fatigue or deterioration they suffer are :

a) Either : mechanical action (pressure of the rail which causes the foot to be driven in, or the sleeper to bend, movements of the rail which give rise to wear by grinding away or tear out the coach screws, vibrations which result in certain materials breaking up and the fastenings becoming loose);

b) or : atmospheric action (dryness, wet, impurities in the air);

c) or : various actions as for example the attack of insects in tropical countries.

These different points can be kept in mind with advantage as some sleepers which stand up well against certain of these agencies, do not, on the contrary, against the others so that it might show good judgment to use one kind of sleeper under conditions which would prevent the employment of sleepers of a different kind.

The metal sleeper, by its very nature, stands up to certain of these destructive forces. It should also, in addition,

thanks to its method of manufacture, show sufficient strength not to get out of shape, nor to break under the loads it has to carry and should ensure that the forces are transmitted to the ballast; it should have a shape that will oppose longitudinal and lateral movements and still be easy to tamp; it should be fitted with a simple, but at the same time strong rail fastening. Finally its weight should be sufficient to make the track stable which latter condition is readily obtained with the metal sleeper.

In France, the State Railways were the first (in 1886) and for a long time were the only ones to make use of the metal sleeper. The pattern adopted was developed from the Vautherin design invented by this French engineer at the Forges de Fraisans (Franche-Comté) in 1860, and was first tested on a large scale in Germany by the Berg and Marche Company subsequent to 1868.

After several alterations to the original pattern, the State Railways finally arrived at a design which gave satisfaction in most instances. The principal French systems subsequently designed a standard sleeper for use with the standard Vignoles rail.

The *Union des Voies ferrées d'intérêt local* has also designed and perfected a pattern of metal sleeper, similar to that of the principal companies but lighter (see fig. 1). This pattern has two profiles each of which can be used on metre gauge or on standard gauge lines.

The light profile No. 1 corresponds to a weight of 32 kgr. (70.5 lb.) for the sleeper 1.70 m. (5 ft. 7 in.) long for the metre gauge. The designing Committee considers it will be amply strong enough in most cases for the axle weights and the speeds in use on the light railways.

For standard gauge, the 2.60 m. (8 ft. 6 1/2 in.) sleeper having the same profile, weighs about 44 kgr. (97 lb.).

For the heavy profile (No. 2) the weight of the 1.80 m. (5 ft. 11 in.) sleeper is about 33 kgr. (84 lb.) and of the 2.20 m.



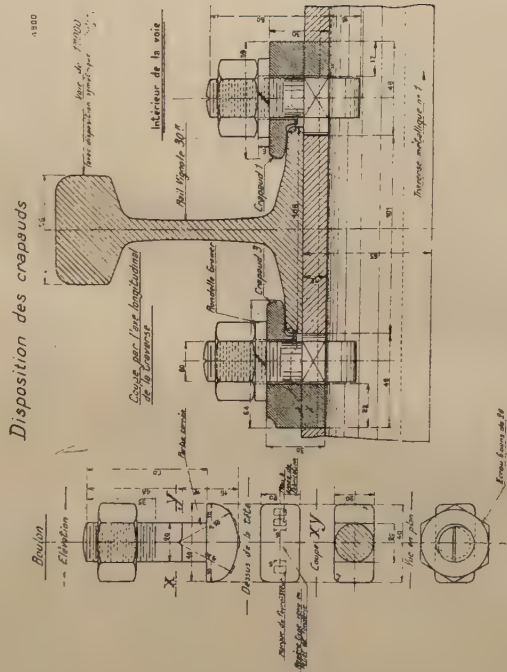
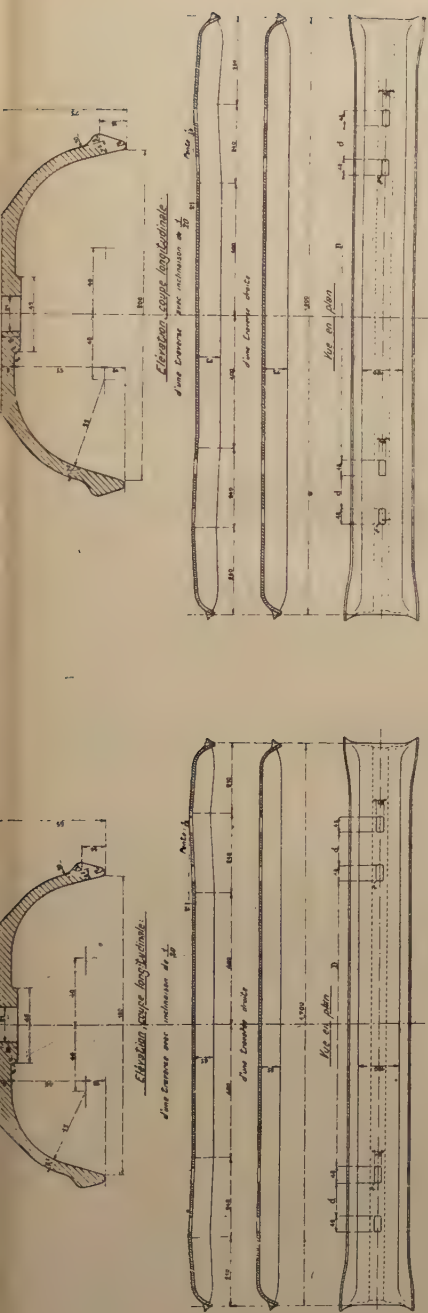


Fig. 1. — Standard profiles of the " Union des Voies ferrées et des transports automobiles ".  
 ( lip. — Dessus de la tête = Top view of the head. — Disposition des crapauds = Section on longitudinal axis of the sleeper. — Crapaud =  
 d'une traverse avec inclinaison de 1/20 = Elevation — coupe longitudinale  
 sleeper. — Intérieur de la voie = Four-foot. — Profil = Profile, — Rail Vignole de 30 kgr. = 30 kgr. (60.48 lb. per yard) Vignoles rail. — Rondelle  
 Grower = Grover washer. — Traverse métallique n° 1 = No. 1 metal sleeper. — Traverse n° 1 — Sleeper No. 1. — Voie de 1 m. avec disposition  
 symétrique à l'autre bout = Metre (3 ft. 3 3/8 inches) gauge with symmetrical arrangement at both ends. — Vue en plan = Plan.

(7 ft. 2 1/2 in.) sleeper about 49 kgr. (108 lb.).

These sleepers can be manufactured with the rail bearing either level or inclined 1 in 20.

The rail is held in place by four clips and bolts per sleeper.

The holes are cut to suit the requirements of the purchaser, so that all types of Vignoles rail between certain limits of thickness and width of rail foot can be used.

Three patterns of clips are available which only vary in the dimensions of the heel and give five different combinations enabling the width of the gauge to vary from 0 to 10 mm. (0 to 0.390 inch) by 2.5 mm. (0.098 inch) steps.

The sleepers are closed in at the ends, this arrangement having been found essential in order that the ballast when thoroughly well tamped along the four-foot portion, should form a compact core which improves the stability and offers considerable resistance to lateral displacement.

Specifications have been prepared with the greatest care for this kind of sleeper to ensure that the purchaser obtains every necessary guarantee as to the proper manufacture of these sleepers.

The results obtained by the great French railway systems from the technical point of view, may be summed up as follows :

The stability of the track after final tamping is equally good, and in some cases better than that obtained with wood sleepers.

The ballast which is most suitable to get this stability is that which offers most resistance to slipping, that is to say, either ballast of broken stone, or ballast of a mixture of sand and gravel which really binds together. This is facilitated by the presence of a little clay, but ballast with much clay which easily turns into mud, or that composed solely of fine sand, which does not cling together well,

or again pebbles of large size, ought not to be used.

Certain railway companies have reported that the resiliency of a track laid on metal sleepers was rather less than when laid on wood, but other companies have not observed any difference.

The life of metal sleepers is chiefly limited by the fastenings getting out of order; the damage to the fastenings occurs the more rapidly as the line carries more traffic, and as the trains are heavier and run at higher speeds. It varies therefore with the traffic rather than by age, contrary to what occurs with wood sleepers and this observation makes it possible to conclude that this kind of sleeper would be most profitably used on lines of light traffic where wood sleepers rot before they are worn out. These sleepers like wood ones can be withdrawn from the main lines when they start to wear and then be used on secondary lines. Some sleepers laid in this way forty years ago, are still in good order.

Wastage by rusting, is slight, except in cuttings in wet positions, or in tunnels. Metal sleepers are little used in points and crossings work.

The light railway systems have supplied information all of which is in close agreement and have obtained the same results as the standard gauge companies, but have not been able to be so definite as regards the life of such sleepers as their tests have been of much more recent date.

From the economic point of view, in order to compare metal and wood sleepers, we should consider :

- The cost price;
- The cost of laying;
- The cost of repairs;
- The cost of renewals;
- The value of sleepers withdrawn from service.

It is difficult to give exact figures under these different headings. In ad-



dition the conclusions come to would differ according as one considered standard gauge track with the heavy profile metal sleepers of the great companies, or the standard gauge with the light U. V. F. profile sleepers or again metre gauge lines. The two last interest us most, and we shall therefore only give the opinions of the light railways on the different points enumerated above.

### 1. Cost price.

a) Wood sleepers. — The 2.50 m. (8 ft. 2 1/2 in.) oak sleeper for standard gauge, creosoted, planed, and drilled, costs at the present time 35 to 40 francs delivered in the Paris area. The fitting of 6 coach screws  $21 \times 105$  ( $53/64 \times 4 \frac{1}{8}$  inches) weighing 0.40 kgr. (0.88 lb.) each, cost in the same district about 4 francs. The standard gauge sleeper as fitted therefore costs today about 39 to 42 francs ready for use.

The oak sleeper 1.70 m. (5 ft. 7 in.) long for the metre gauge under the same conditions costs 18 to 20 francs without, and 20 to 22 francs with the four coach screws.

b) Metal sleepers. — The light profile metal sleeper for standard gauge (44 kgr. = 97 lb.) cost, in August 1927, 780 francs the ton at the works or 34 francs each and 39 delivered in the Paris area. The fastening of 4 bolts and 4 clips weighing in all 2.9 kgr. (6.4 lb.) at 200 francs the ton cost 5.80 francs. The total cost of the fitted sleeper therefore amounted to 45 francs delivered on the job. Under the same conditions the standard gauge heavy profile sleeper (49 kgr. = 108 lb.) was worth about 50 francs.

The metal sleeper for the metre gauge costs 33 and 39 francs respectively delivered, complete with fastenings. The cost price of metal sleepers is therefore about the same as for wood for the standard gauge line, but is appreciably higher for the metre gauge.

### 2. Cost of laying and of handling.

The metal sleeper being lighter than the wood, is much cheaper to handle, one man being able to deal with it even in the case of standard gauge line. As a result of their shape which makes it possible to pile them one inside the other, their shorter length and the fact that they can be stacked closer together instead of large spaces for air to circulate through them having to be left, the stack of these sleepers requires much less room than that of wood sleepers. The wagons used to move them as also the trollies can carry much greater quantities. The sleeper can be laid more quickly as it weighs less: the tightening up of the clips is quicker than screwing in coach screws; levelling takes about the same time; the tamping takes a little longer and generally requires more care besides which it usually has to be done again after a short time.

Taken altogether, the relative cost of laying is lower than that of a wood sleeper. But the saving realised in laying and in handling being almost entirely due to the reduction of weight it is the greater as there is a wider margin between the weights of the metal and of wood sleepers: this economy is therefore the greatest when the light standard gauge profile is used.

### 3. Cost of upkeep.

Once the core of ballast is properly formed by the necessary tamping, the stability of the track laid on metal sleepers is excellent both in plan and profile and in most cases superior to that of lines laid on wooden sleepers. Tightening up the fastenings which at one time gave rise to some doubt, requires no more care than do the coach screws. The cost of upkeep ought then to be lower than with wood sleepers.

#### 4. *Cost of renewal.*

These costs include cost of labour for taking up the old sleepers and relaying with new, and the cost of these latter which should be distributed over their useful life.

Now the results obtained so far show that on the lines of average traffic belonging to the great companies, the metal sleepers can stand the passage over them of 150 000 trains which at 10 trains per day, represents a life of 40 years.

On light railways it would seem not unreasonable to take these sleepers as having a life of 30 to 50 years that is to say double the life of creosoted oak sleepers.

#### 5. *Value of recovered sleepers unfit for further use.*

This value is very small for wood sleepers which can only be used for firewood after being sawn up at considerable cost: the value of a wood sleeper taken out of use will not be more than 1/25 of its original value. On the other hand the value of a metal sleeper at scrap price can easily be 1/4 of the first cost.

These various considerations which it is difficult to translate into exact figures enable us none the less to conclude that in spite of their appreciable higher cost price over wood sleepers, metal sleepers used in suitable positions and especially on lines of little traffic make it possible to affect appreciable saving in working.

It is to be hoped that the work done by the « Union des Voies Ferrées » to develop the use of metal sleepers on light railways will be encouraged by the members and that many operators will agree to the appeal made to them to place orders for large quantities and so help to reduce the price.

#### **Reinforced concrete sleepers.**

The use of reinforced concrete sleepers is much more recent than that of

metal sleepers. The first tests of any importance have been made since 1900. In 1908 the Italian State Railways, after some laboratory tests and tests on the track, laid 300 000 concrete sleepers. Some French and foreign railways before the war had also put into service small numbers of these sleepers. These first tests were almost all failures. The shape of these sleepers based on that of wood sleepers was practically prismatic: the rail fastening was like that of the wood sleeper and usually consisted of a coach screw screwed into a block of wood embedded in the concrete. A large number of these sleepers disintegrated very soon under the sole plates or under the foot of the rail: others broke under the rail or at the middle; the block of wood either rotted, or split.

In spite of such small encouragement, the tests were continued by some railways and were again taken up after the war. At the Rome Congress in 1922 however, the replies received on this subject from most of the railways, and especially the foreign railways described almost entire lack of success, some even stating that no progress had been made since 1914.

It would seem however, that at the present time a certain number of trials have met with success—several patterns of sleepers have satisfactorily undergone tests sufficiently severe from the point of view of strength and durability for them to be substituted for wood under certain circumstances quite satisfactorily.

The reinforced concrete sleeper must of course fulfil the same functions and stand the same loads and stresses as wood and metal sleepers. The way in which concrete works under stress and its very nature recommend or not its use under conditions very different from those in which wood or steel would be used.

Thus the principal features a reinforced concrete sleeper should show, and on



which one should particularly insist, are the following :

1. Sufficient strength to stand without breaking and without cracking the important bending moments which occur both at the middle and under the rail;
2. Not easily damaged during handling nor when being tamped;
3. Toughness to prevent the surface on which the rails bear, from disintegrating;
4. Stiffness to ensure the pressure on the ballast being properly distributed;
5. Simple and strong rail fastening which will not be loosened by vibration and which will make use of existing parts if possible;
6. Under surface rough enough to prevent the sleeper from moving out of place by slipping on the ballast;
7. Easy to manufacture in shops as near as possible to the place at which they will be used;
8. Low cost price.

The theoretical study of the stresses carried by the sleepers has been undertaken many times and in spite of the impossibility of defining these stresses with any precision, it has been possible to determine their order of magnitude and to draw from the investigation, valuable conclusions. M. Desprets, Engineer of the Belgian State Railways, published a very interesting article on this subject in the Bulletin of the Railway Congress of July 1922, page 959. In this article Mr. Desprets having calculated the bending moments under the rail and at the middle of the sleeper, gives an explanation of the breaking of the earliest ferro-concrete sleepers the length (2.60 m. = 8 ft. 6 1/2 in.) of which was excessive for standard gauge. With this length and under certain circumstances, the bending moment at the rail seat could be double that at the middle, and this difference would be one of the causes of

the breaking of the sleepers at this place a fracture which frequently occurred in early days but which appears to be much rarer with the sleepers shortened to 2.20 m. (7 ft. 2 1/2 in.) or 2.40 m. (7 ft. 10 1/2 in.). Mr. Desprets points out in this connection that there is a fundamental technical difference between wood sleepers and ferro-concrete sleepers of prismatic form : the length of the former is determined by the condition which may be called « of equal deflection » that is to say giving equal deflections at the middle and at the ends of the sleeper and consequently reducing to a minimum any deviation from the symmetrical plane of the rail in relation to the vertical plane : the length of the latter is, on the contrary, determined by the condition that may be described as « of equal strength » that is to say ensuring equal bending moments at the rails and at the middle of the sleeper. These considerations presuppose a constant ballast coefficient under the sleeper, that is to say equal tamping throughout its length, which does not exist when first laid, but which naturally tends to be realised after a time through vibration.

At the present time ferro-concrete sleepers can in first principles be related to two types from which they differ more or less in certain details of shape or of construction, some of them being based on both the two original types.

1. The shape of the first type is taken from the wood sleepers that is to say it is to all intents prismatic, the section being sometimes variable and being rather larger under the rail. This kind of sleeper in certain patterns has been thinned down at the centre under the lower face so as to avoid excessive tamping at this part. The Calot sleeper first tested on the Paris-Orleans Railway, would appear to be the most widely distributed pattern.

2. The second type consists of two supports having a large bearing area cross

tied by either a light steel girder or by a ferro-concrete member of small width.

The Vagneux sleeper tested more especially on the Paris, Lyons and Mediterranean Railway (see figs. 2 and 3) belongs to this type.

The rails are fastened to the ferro-concrete sleepers either by bolts and clips or by coach screws and these latter can be screwed into either ferrules or blocks of wood cast in the concrete or in a cast iron seating or directly into the concrete with or without a metal spiral intended to reinforce the threads of the nut so formed.

Some patterns of sleeper derived from one or other of these two types and fitted with different patterns of rail fastening, have given over a period of many years very encouraging results due probably to very careful design and manufacture.

Several of the principal French Railways have placed large orders for Vagneux and Calot sleepers or have in some cases themselves manufactured them.

The light railways have also carried out many tests but generally on very short sections. Some of them have however recently placed large orders for Vagneux sleepers to lay complete sections of from 15 to 40 km. (9 to 25 miles) in length. So far as we know, only one French light railway, that of the Camargue, has seriously undertaken the manufacture of ferro-concrete sleepers for the equipment of its lines, and has already made 75 000 since the work was started in 1912. The results obtained on this railway from the technical and economic points of view are extremely interesting and will be dealt with later on.

The sleeper designed and made by the Camargue Light Railway Company for metre gauge line, is extremely simple in form and construction (see fig. 4). A detailed description has been given of it by Mr. Balensi, manager of the Company, in the April 1924 number of the *Industrie des Tramways, Chemins de fer et Transports publics Automobiles*. It will be

sufficient if we recall to mind the leading features.

The general shape is sensibly that of a quadrangular prism, lightened out at the middle part, both to save concrete and to prevent fracture by excessive tamping thereat. The reinforcement is built up of 4 bars 12 mm. (15/32 inch) in diameter suitably tied together. The lower face is chequered to prevent it slipping on the ballast. The rail seat is inclined 1 in 20.

The rail fastening consists of a coach screw which is screwed directly into the concrete as in the Vagneux sleeper, but the steel spiral has been suppressed as it did not appear to hold the coach screw any better than the simple hole in the concrete made when casting the sleeper. This simple and cheap method of fastening simply necessitates the use of coach screws made to closer limits than those usually used with wood sleepers.

The first 1.75 m. (5 ft. 9 in.) sleepers tested in 1912 having been found to be too long, sleepers shortened to 1.55 m. (5 ft. 1 in.) were put into service in 1913 and stood up very well nearly all of them being still in service. Since that time the manufacture has continued and will be until the 125 km. (78 miles) of the system have been laid on them.

The « Société des Transports en Commun de la Région Parisienne » (S. T. C. R. P.) has also put into service a certain number of ferro-concrete sleepers on standard gauge lines but much lighter than those used by the main line companies, weighing only about 80 kgr. (176 lb.) These sleepers are of four types :

- a) Composite type, Vagneux system;
- b) S. T. C. R. P. type with coach screws (see figs. 5 and 6);
- c) S. T. C. R. P. type with clips (see figs. 7 and 8);
- d) Gaudin (described in a paper read by Mr. Weiler, director general of the « Compagnie des Tramways de

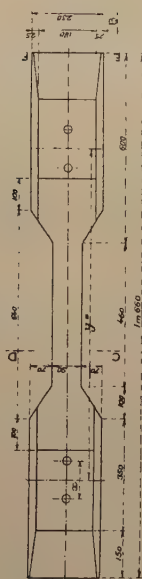


Syst. Vagnœux B.V. S.G.D.G

# TRAVERSE A PATINS

*Echelle: 0<sup>m</sup> 10 p.m.*

## Plan



Elevation A.B.

Élévation E.F

Seille d'appui

Coupé C.D.

Surface vappu une tête — 1310 cm<sup>2</sup>  
Cuer + taton — 61 cm<sup>2</sup>  
Bords et la transverse: 103 mm

$$x = p + t + 2$$

Fig. 2.

Vagneux system type of sleeper with enlarged ends.

Syst. Vachaux B<sup>m</sup> S.G.D.G.

# TRAVERSE MIXTE

Modèle N°1

Echelle . 0<sup>m</sup> 10 p<sup>m</sup>

## Plan

Elévation A.B

Coupe CD

**Selle d'appui!**  
 orme rancore aggrade l'écritur p'p'm.

Surface, d'après d'une table — 1290 cm<sup>2</sup>  
Cube de béton — 38 cm<sup>3</sup>  
de la Université  
Fonds — 118 cm<sup>3</sup>  
de la Université — 118 cm<sup>3</sup>  
de la Université — 118 cm<sup>3</sup>

NOTA

La parone idro e la pozzella post-ala  
dura d'ora las cas las parone recint nua  
gornit de tubon contra dora la caspa C.D  
avert mazzura lora de verna nua su d'ora ande  
parone cantabile

၁၆၆

Composite sleeper, Vagneux system.

*Explanation of French terms in figures 2 and 3:*

Course = Section. — Échelle = Scale. — Élévation = Elevation. — Selle d'appui = Sole plate. — Traverse à patin = Enlarged end sleeper.  
Traverse mixte = Composite sleeper.



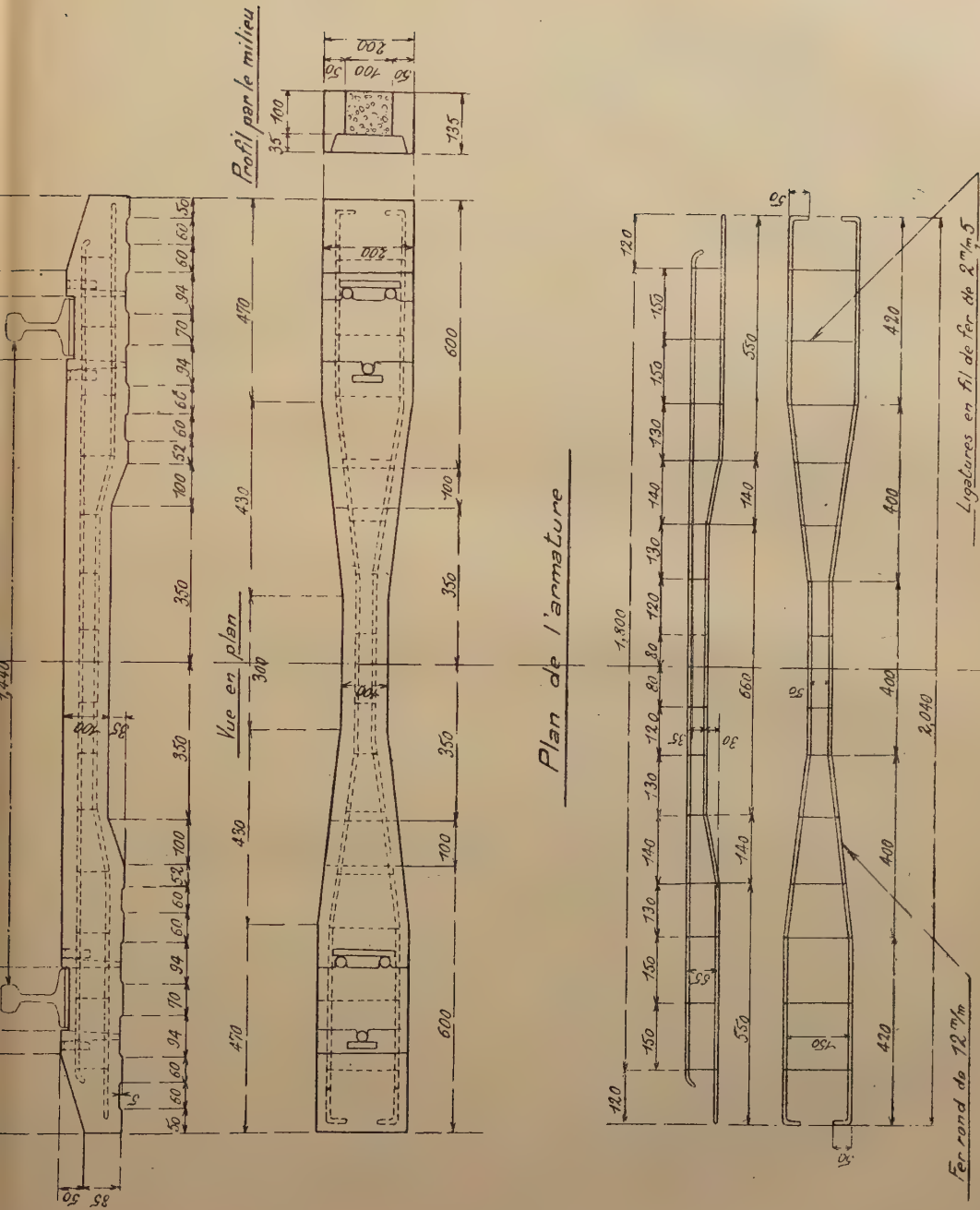


Fig. 5. — Ferro-concrete sleeper, T. R. C. P. type, with coach screw rail fastening (general view).

Explanation of French terms: Fer rond de 12 mm = Round steel 12 mm, (15/32 inch). — Ligatures en fil de fer de 2 mm 5 = Binding wires of steel 2.5 mm. (0.098 inch). — Plan de l'armature = Plan of the reinforcement. — Profil par le milieu = Profile at the middle. — Vue en plan = View in plan.





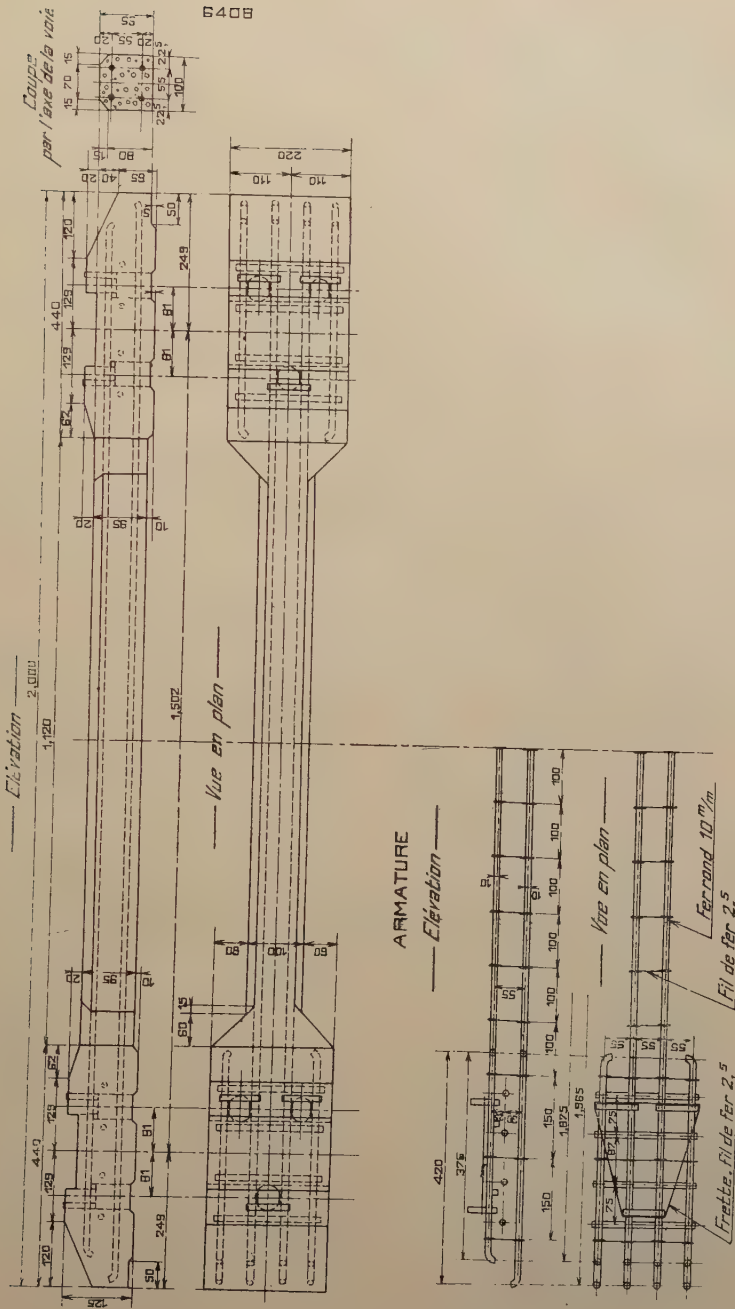


Fig. 7. — Ferro-concrete sleeper, T. R. C. P. type with bolt and clip fastening.

Explanation of French terms : Armature = Reinforcement.  $\perp$  Coupe par l'axe de la voie = Section on the centre line of the track.  
 Fer rond 10 mm = Steel bar 10 mm. (3/8 inch). — Frette fil de fer 2.5 = Clip, steel wire 2.5 mm. (0.098 inch).

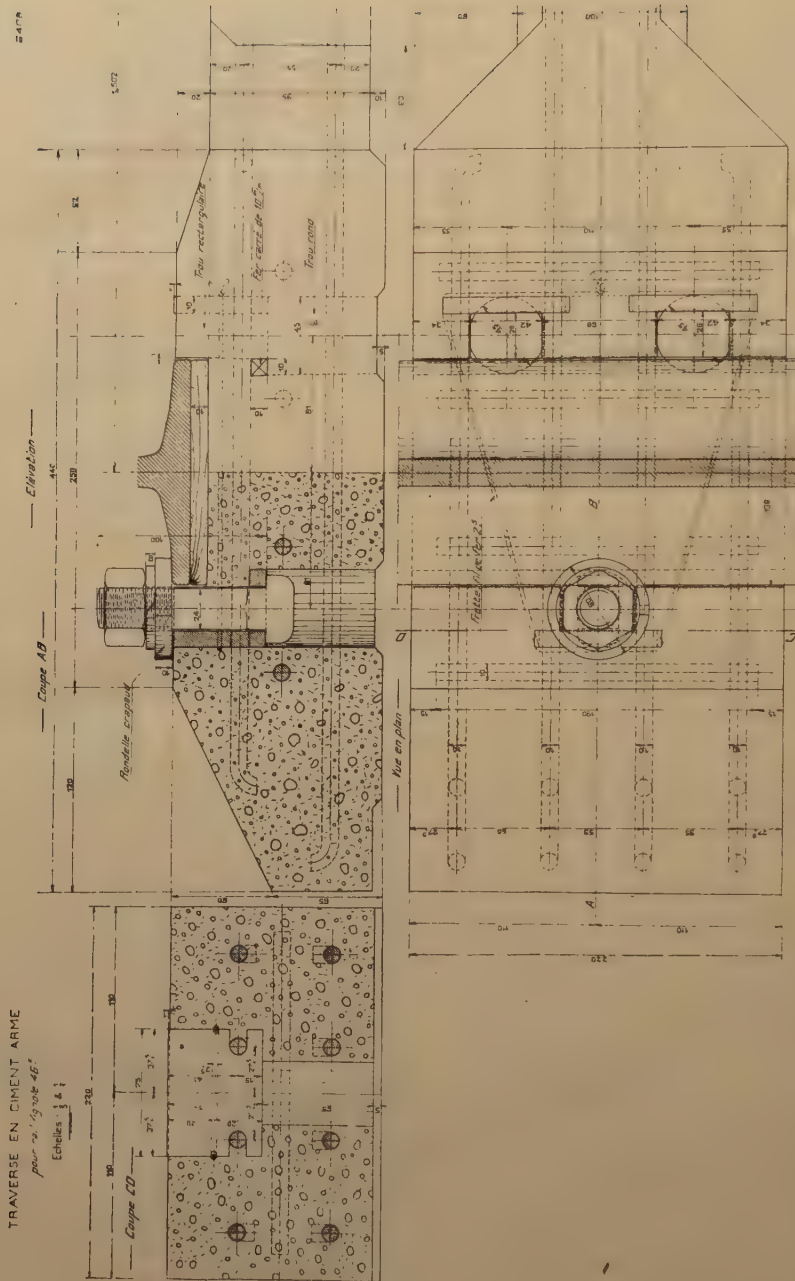


Fig. 8. — Ferro-concrete sleeper, T. R. C. P. type, with bolt and clip fastening. — Detail of fastening.

*Explanation of French terms :* Fer carré de 10 mm. = Square steel of 10 mm. (3/8 inch.) — Frette fil de fer 2.5 = Clip of 2.5 mm. (0.098 inch.) steel wire. — Rondelle crapaud = Clip washer. — Traverse en ciment armé pour rail Vignole 46 kgr. = Ferro-concrete sleeper for Vignoles rail of 46 kgr. (92.73 lb. per yard). — Trou rectangulaire = Rectangular hole. — Trou rond = Round hole.



Nantes », before the General Technical Meeting at Lyons in October 1925, which was printed in *Industrie des Voies ferrées* of February 1926 <sup>(1)</sup>.

Other light railways also having used ferro-concrete sleepers for several years have been good enough to send us particulars of their tests and the results obtained which generally are in agreement, may be summed up as follows :

✓ 1. *From the technical point of view.*

Sleepers for metre gauge lines and those used for standard gauge lines by the S. T. C. R. P. weigh about 80 kgr. (176 lb.). They are therefore easily handled. Instructions are issued that care is to be taken when handling them, but the staff pay little attention thereto, and in spite of it, it is rare to see sleepers damaged whilst being handled.

There is no special difficulty in laying them; it takes rather longer than with wood sleepers; the adjustment of the track is easier. The rails are fastened down either by bolts and clips, or by coach screws, this latter at the present time appearing to be preferred. It is used with a seating in cast iron which forms a nut, or is screwed directly into the concrete with or without metal spiral. Before being screwed in, the coach screw is well greased, or better still, covered with a bituminous mastic which helps the screwing home, and hinders rusting.

Subsequent screwing up is easy; the loosening is however very slight. It is recommended practice to place a packing in hard wood between the foot of the rail and the sleeper.

Nearly all kinds of ballast are suitable for use with the ferro-concrete sleeper : broken stone of very hard quality and

in large pieces is not to be recommended, because it can set up at certain points very serious local stresses. The softness of running is comparable with that obtained with wood sleepers.

The stability of the line is very good and is increased by the weight of the sleeper which is generally heavier than that of the wood sleeper. The tendency to side slipping is lessened by the chequering of the lower side.

The tamping of the track has to be done over again after a short time, after which no special supervision is needed.

The information as to serviceable life is less convincing than in the case of that given for metal sleepers because the tests are of much more recent date : none the less as some of them have already been in use 15 years it is permissible to hope that well designed well made ferro-concrete sleepers will probably have a greater life than wood sleepers. This life would appear to be as with steel sleepers, a function of the fatigue undergone, and consequently of the number of trains carried, rather than of the age. As the cause of destruction by rusting no longer exists, ferro-concrete sleepers may be used in places where metal sleepers would not be considered and in which wood sleepers would rot quickly (for example in the case of track laid alongside roads through towns as this track is often soaked by house drainage water).

2. *From the economic aspect.*

The Camargue System manufactured its own sleepers which cost 15.35 francs each for metre gauge track at the factory with relatively high priced materials (gravel 70 francs the cubic metre; cement at 250 francs the ton; round steel at 108 francs the 100 kgr.). This cost is lower than that for the corresponding sleepers in creosoted wood.

The « Société des Transports en Commun de la Région Parisienne » purchases standard gauge sleepers at the price of

<sup>(1)</sup> See also *Bulletin of the Railway Congress*, March 1927 number, p. 206.

50 to 60 francs (including fastenings), oak sleepers for 43 francs, and metal sleepers for 52 to 53 francs.

The relative costs of laying and handling are, on account of the weight, rather higher than in the case of wood sleepers: on the other hand, the cost of maintenance is not greater.

Finally, the sleepers no longer suitable for use, can be broken up on the site — the reinforcement, which represents an appreciable part of their original cost, can be recovered. The percentage of the value recovered is obviously lower than that obtained in the case of metal sleepers, but it ought to be higher than in the case of those in wood.

It can be seen therefore, that in the case of the sleepers on the Camargue system, which have a longer life than the wood sleepers, a very definite saving is obtained.

In the case of the S. T. C. R. P. provided the ferro-concrete sleepers have a life 25 % longer than that of those in wood, their use will effect economy. It would appear that a longer life than this estimate is to be expected from them.

To sum up, it appears to be very desirable that the use of ferro-concrete sleepers should be intensified at least

on light railways with light and moderate traffic and that the results obtained as well as the conditions under which they were used should be published so that everyone engaged in the operation of railways should be able to profit by the progress made.

Engineers making these experiments ought undoubtedly to concentrate especially on the simplification of the moulds and reinforcement so as to reduce the cost of manufacture, but at the same time they should see that especial care is taken in mixing the concrete, as this has very great importance as regards the strength of the final product. During manufacture the necessary tests to check the strength ought to be carried out on samples and on a certain proportion of finished sleepers.

It is to be hoped that in the near future two or three types of ferro-concrete sleepers may be standardised, which would meet the needs of the light railways. As in the case of metal sleepers, a specification could be drawn up laying down the manufacturing conditions and giving the tests to be made in order to ensure that sleepers satisfying every requirement as to strength and durability were obtained.

# Note on the inverted segregation observed in certain rails,

By ALBERT PORTEVIN,

ACTING PROFESSOR AT THE " ÉCOLE CENTRALE ",  
PROFESSOR AT THE " ÉCOLE SUPÉRIEURE DE FONDERIE " .

Figs. 1 to 3, pp. 1074 and 1075.

(*Revue Universelle des Mines.*)

The fact recorded by Mr. Decherf in the number dated the 15 March 1928 of the *Revue Universelle des Mines* (1) of an inverted segregation in certain rails has already been observed, and is the result of rolling an ingot before complete solidification : but the hypothesis of the author supposing at this moment the centre of the ingot to be liquid (2) and to be subjected to an expulsion by force under the action of the occluded gases, is not entirely satisfying, as it does not explain clearly the resulting lower content in carbon in the centre of the piece.

Let us briefly recapitulate in what this « inverted segregation », sometimes observed when etching macrographs, and particularly clearly when the method of using sensitive paper is employed, consists :

Normally the centre region is more carburised and more impure (S and P) than the surrounding areas (at least in the top part of the ingot); in the case with which we are dealing, the centre has the lowest carbon, sulphur and phos-

phorous content, and is surrounded by a very impure and carburised zone forming, as it were, an aureole.

The figures 1 and 2 from a semi-hard steel bar 80 mm. (3 1/8 inch) in diameter shew the phenomenon very clearly : by impression on acid sensitive paper (Baumann process) given in figure 1, the centre appears white, therefore very pure as regards sulphur, and is surrounded by a very highly coloured zone in which has collected the sulphur from the centre : figure 2 is the photograph of the result obtained by etching with iodine and of two impressions of balls 10 mm. (0.394 inch) diameter under 3 000 kgr. (6 600 lb.) load, made one at the centre, and the other on the outer ring; the difference in the diameters of the impressions is clear without any measurement being necessary : it shews the centre is much softer owing to its very low carbon content.

The mechanism of the phenomenon is as follows : the ingot is taken from the soaking pits too soon and sent to the rolling mills whilst its central zone is still *incompletely solidified* although not entirely liquid : this zone is at temperatures in the period of solidification, that is to say, *between the liquidus and the solidus* of the diagram. It is therefore formed of a confused mass of dendrites of a lower carbon and phosphorous con-

(1) See page 1048 of this issue.

(2) The author improperly uses the words « solidus » and « liquidus » to designate the *state* of a metal solidified or liquid : the liquidus and the solidus are the *lines of the equilibrium diagram* marking the temperature at the beginning and at the end of solidification.



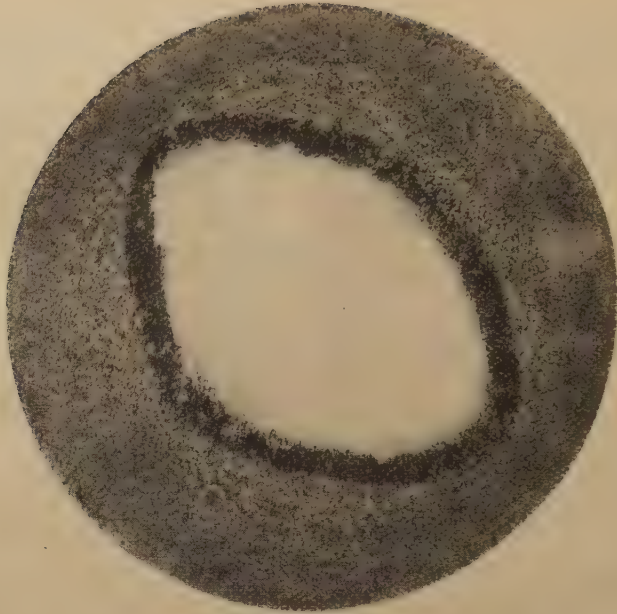


Fig. 1. — Result of test using acid sensitive paper.



Fig. 2. — Etching by iodine and impressions of Brinell ball <sup>(1)</sup>.

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<sup>(1)</sup> The figures 1 and 2 are symmetrical and cannot be superimposed.

tent bathed in a more carburised and more phosphorated liquid containing inclusions of manganese sulphide : it is like a sponge full of a more carburised and impure liquid : when the sponge is squeezed by breaking down the ingot during blooming, the dendrites weld to-

gether, forming at the centre a compact and purer mass, whilst the impure liquid, driven out, lodges between this mass and the solid though plastic outer layers.

This is what we have tried to shew by the sketches of figure 3.

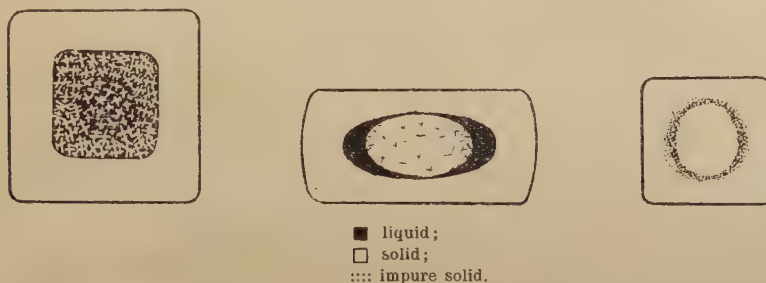


Fig. 3.

The enlargement is explained by the fact that the pressure of the rolling is transmitted laterally by the internal liquid : whence a bowing out of the vertical faces, characteristic of ingots passed through the blooming mill whilst too « young ».

Furthermore, the correlation between the production of this phenomenon and

the premature removal of the ingot from the soaking pits has been experimentally demonstrated.

In this way we get involuntarily on the central region of the ingot a mechanical method of refining the steel, a particular case of a more general process of refining by separation of the primary crystals during solidification.

## The spot system of repairing freight cars on the Baltimore & Ohio Railroad.

Figs. 1 to 8, pp. 1077 to 1084.

(*The Railway Mechanical Engineer.*)

Beginning about 1920, the Baltimore & Ohio started work on the introduction and development of a new system of repairing freight cars which, during the succeeding years, has worked with considerable success. Although the spot system was inaugurated in December 1920, it was not placed in operation in all the car shops on the system until 1 January 1922. This system, generally known as the spot system, has been adopted, either in the complete form as used on the Baltimore & Ohio, or some modification thereof, by a large number of railroads.

Previous to the installation of the spot system, the management seriously considered the advisability of building a new freight car repair shop. A number of plans were drawn, some of which represented an expenditure of from two to three million dollars. However, with the spot system, the railroad has been able to abandon a number of its shops and, at the same time, maintain all of its freight cars satisfactorily in those remaining. Since 1920, the railroad has rebuilt over 90 000 cars, and built new bodies for over 8 000 cars, including all-steel hoppers of 50 000 lb. and 70 000 lb. capacity. In addition, it has built a considerable number of all-steel underframes for caboose cars.

The following description of the Baltimore & Ohio spot system is, to a large extent, the same as that prepared by the management of the car department for

the information and guidance of its supervisory officers, and issued under the general heading, « Working system used in freight car classified repair shops and on shop tracks ».

### Unit organization used with the spot system.

A unit organization provides for what is called a unit of force composed of a unit foreman, assistant unit foreman, and 48 workmen, who work on a designated track or tracks, in a shop or on shop yard repair tracks, where heavy repairs or rebuilding of equipment is performed. A unit of force works on all kinds of freight cars, except refrigerator cars, and is made up as shown in table I.

TABLE I.

#### The unit of force for all except refrigerator cars.

	Number.
Unit foreman. . . . .	1
Unit assistant foreman. . . . .	1
Freight carmen . . . . .	26
Air brake repairman. . . . .	1
Blacksmith . . . . .	1/2
Painter . . . . .	1/2
Carman helpers. . . . .	11
Carman helper (boxes, packing and oil) . . . . .	1
Carman helper, (material man) . . . . .	1
Painter helper . . . . .	1/2
Blacksmith helper . . . . .	1/2
Carman apprentices . . . . .	5
Shop laborer . . . . .	1
Total. . .	50



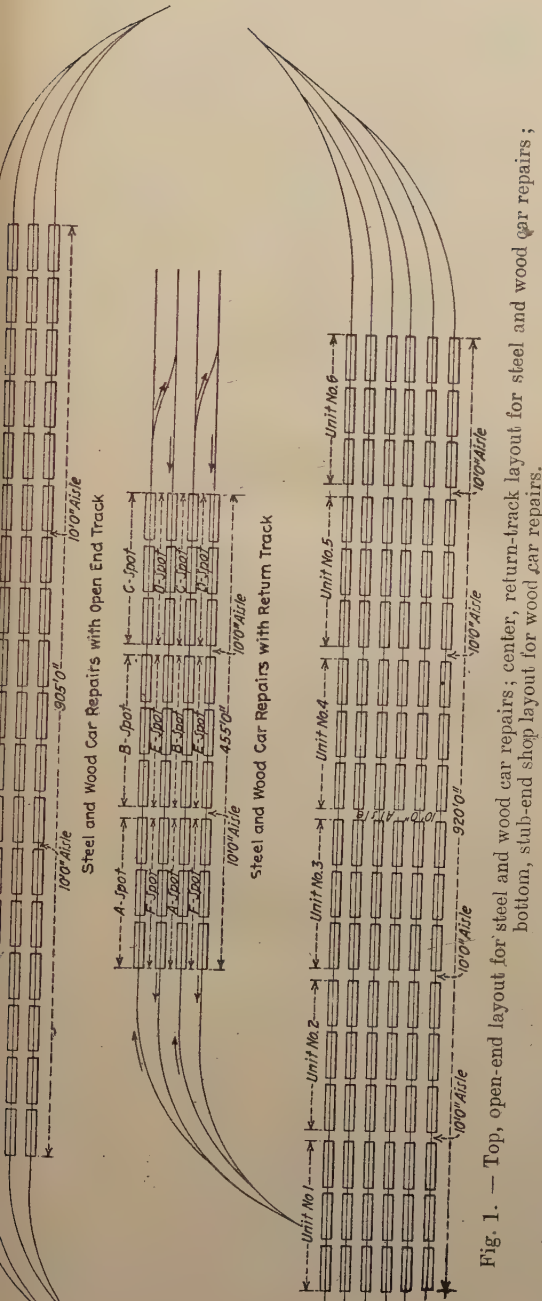


Fig. 1. — Top, open-end layout for steel and wood car repairs; center, return-track layout for steel and wood car repairs; bottom, stub-end shop layout for wood car repairs.

This unit of force is required to give heavy repairs or rebuilding repairs to a minimum of 15 cars per week and is required to repair and return to service each working day a minimum of 2 1/2 cars.

The make-up of a unit of force for refrigerator cars is also shown in table II.

TABLE II.

Unit of force for handling refrigerator car repairs.

	Number.
Unit foreman. . . . .	1
Unit assistant foreman. . . . .	1
Freight carmen . . . . .	27
Air brake repairman. . . . .	1
Blacksmith. . . . .	1/2
Painter. . . . .	1/2
Carmen helpers. . . . .	12
Carmen helper (boxes, packing and oil). . . . .	1
Carmen helper (material man). . . . .	1
Painter helper. . . . .	1/2
Blacksmith helper. . . . .	1/2
Carmen apprentices. . . . .	5
Shop laborer. . . . .	1
Mill machine hand. . . . .	1
Sheet metal worker and tinner. . . . .	2
Total. . . . .	55

This unit of force is required to give heavy repairs or rebuilding repairs to a minimum of six cars per week and are required to repair and return to service each working day a minimum of one car.

The spot system

The spot system indicates that certain repairs to a car are performed at designated spots on certain repair tracks in shops or in shop yards, where heavy or rebuilding repairs are made. The unit organization with the spot system is worked in four different ways, which are as follows :

*First.* — Repairing steel and wood cars on a layout with open-end tracks (fig. 1). The repair tracks or shop

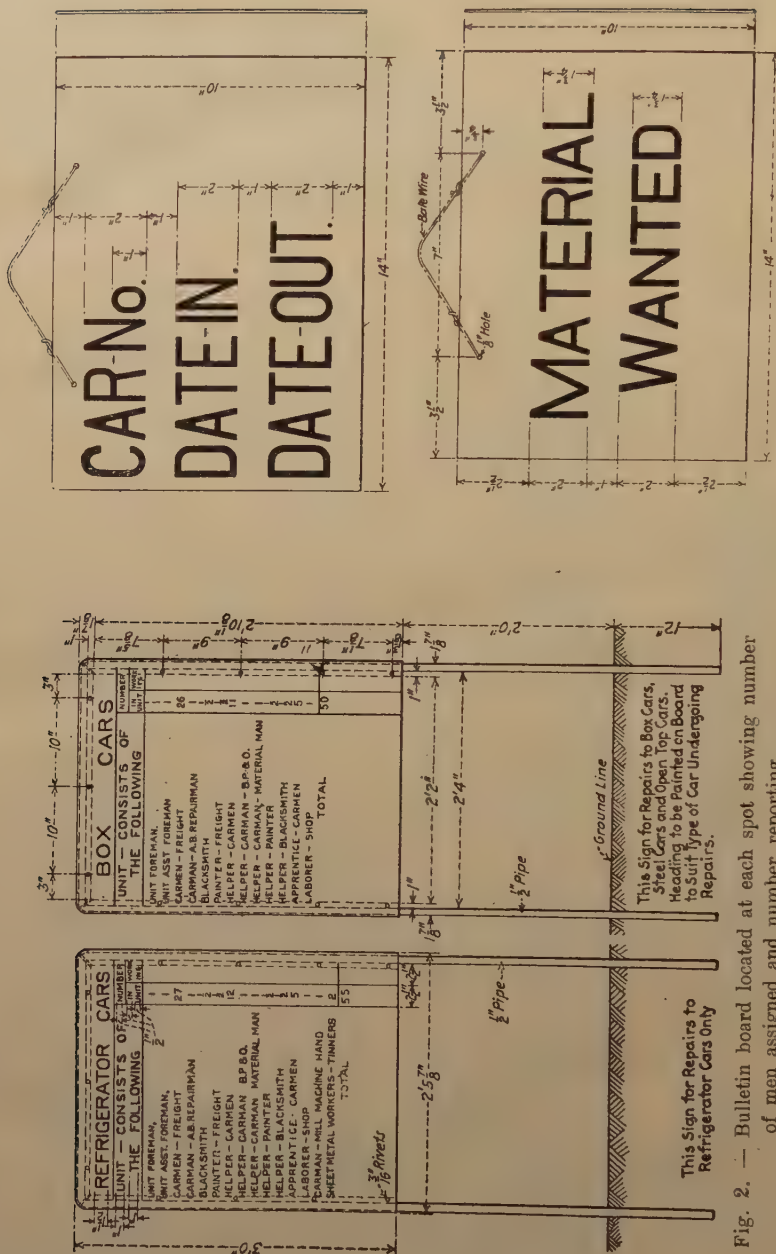


Fig. 2. — Bulletin board located at each spot showing number of men assigned and number reporting.

Fig. 3. — Top, front side of car bulletin; bottom, reverse side.

tracks are of sufficient length to have 18 cars placed on each track, and each track has switch connections on both ends so that cars can be started in on one end at the stripping spot and then moved from spot to spot at the close of each day over the track to its other end. When it leaves the last spot it should be completed ready for service. The force on such a track should be divided into six gangs working on six different spots. Each spot should be of sufficient length to hold three cars, so that cars can be moved up one spot at the close of each working day until completed. This procedure insures completion of repairs to a car within six days from the time it enters the first spot to be stripped until it is repaired and returned to service.

*Second.* — When the repair tracks or shop tracks are not of sufficient length to hold 18 cars, then that number of cars can be spotted on two adjacent tracks sufficient in length to have three spots on each track sufficient in length to hold three cars in each spot, or a total of 18 cars on two adjacent tracks. Referring to the diagram for steel and wood car repairs on layouts with return tracks (fig. 1), cars placed for repairs on these tracks will first be placed on the stripping spot, which is located on the entering end of the track, and the cars will be moved at the close of each day from spot to spot over one track and thence via the cross-over to return on the adjacent track. On such tracks, one unit of force will be worked on two tracks in place of on one track, as in the first method.

*Third.* — When the repair tracks or shop tracks have a stub end on one end, and switches connecting up the tracks on the opposite end, there should be a minimum of six tracks in the shop or shop yards. These tracks should hold a minimum of three cars each and facilities provided for one unit of force to

be worked on the spot system across the shop or shop yards.

If each one of the six tracks will hold six cars it will provide two spots on each track with three cars in each spot, and two units of force can be worked across the shop.

If each one of the six tracks will hold nine cars on each track, it will provide three spots with three cars in each spot, and three units of force can be worked across the shop, etc. Such a shop will be worked in accordance with the diagram in figure 1, showing the layout of a stub-end shop for wood car repairs.

Each unit of force worked is assigned to a certain track or tracks in a shop or shop yard, and worked in accordance with the three diagrams shown in figure 1.

At the first spot of each unit of force is placed a bulletin board as shown in figure 2, bearing the names of the unit foreman in charge and the assistant unit foreman. It will also show the kind of workman assigned to the unit foreman, who reports to the shop foreman.

Two columns are provided on this bulletin board. The left hand column shows the number of each kind of workmen composing the unit. The column at the right shows the number of such workmen reporting for work and is filled in with chalk immediately after the time of starting work each day, by the unit foreman in charge.

Near the corner on the side of each car is a bulletin, placed as shown in figure 3. This bulletin board is painted black on one side and bright red on the opposite side. The black side shows the date the car was placed on the first spot for repairs, and the date that the car will be completely repaired and returned to service. The red side shows the words in white letters, « material wanted ». This side of the bulletin is placed out when material cannot be obtained, and also to show that the car is passing through the shop in need of ma-



terial for repairs that could not be obtained.

Cars of the same kind and class, when possible, are worked through the spots of each unit to insure maximum output by co-ordinating the work and material as far as possible on cars being repaired by each unit of force. Repairing cars in this manner insures more satisfactory output and better work, than if cars of a mixed class and kind are allowed to pass through the spots of each unit together.

shop is repairing both house cars and open top cars, open top cars should be worked on one side of the shop, and house cars on the opposite side. This proves more satisfactory than to mix cars indiscriminately, as it better separates the men and material.

At the beginning of each spot is placed a bulletin board for designating the work to be done at the spot, and this is painted the color by which the spot will be known, as shown in figure 4. Table III shows the color of bulletin board, with the lettering used at each spot.

TABLE III.

**The color designation of the six spots.**

Spot.	Color of bulletin board.	Color of lettering.
A.	Red.	White.
B.	White.	Black.
C.	Blue.	White.
D.	Green.	White.
E.	Yellow.	White.
F.	Black.	White.

*Work at spot A* (designated with red bulletin). — Strip the car for repairs by removing all defective parts that are to be renewed or repaired.

Work at spot B (designated with white bulletin). — Repair the trucks, underframes, draft gear and attachments.

*Work at spot C* (designated with blue bulletin). — Steel cars : Fit and lace up all parts in place for the riveters, including floors, cross ridge sheets, side hoppers, longitudinal hoods, doors, etc. House cars : Repair and fit in place all framing above the underframe, preparatory to the application of the siding and the inside lining, floor and bevel strips.

Work at spot D (designated with green bulletin). — All-steel cars : Rivet up the

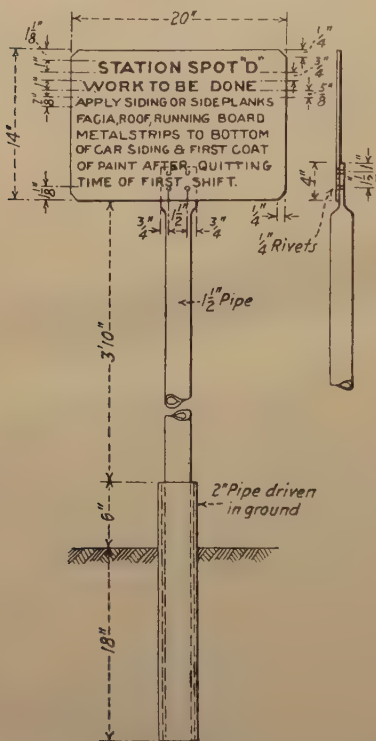


Fig. 4. — Bulletin showing work done on each spot.

At shops where more than one kind of cars are being repaired, the units repairing each kind of car are segregated as much as possible. For example, if a

THE BALTIMORE & OHIO RAILROAD COMPANY.  
Motive Power Department.

DAILY REPORT ON SEGREGATED FORCES AUTHORIZED TO BE ASSIGNED EXCLUSIVELY TO  
SPOT SYSTEM FREIGHT CARS REPAIRED. Date \_\_\_\_\_ 192\_\_.

UNIT NO. \_\_\_\_\_ KIND OF CAR \_\_\_\_\_ STATION \_\_\_\_\_

Consist of unit :					Men of authorized unit actually working on class of car for which authorized. No. of men.			Number of men of authorized units working on other work than for which authorized.
OCCUPATION.	Actually working.	Number of men.			Number.	Total one man hours worked.	Reduced to basis of 8 hrs. per man.	
		Absent.	Positions vacant.	Total.				
Unit foreman . . . . .								
Unit foreman assistant .								
Helper - material man . .								
Laborer . . . . .								
Blacksmith . . . . .								
Helper blacksmith. . . . .								
Box packer and oiler . . .								
Painter . . . . .								
Helper painter. . . . .								
Air brake repairer . . . .								
Carmen . . . . .								
Helper carmen. . . . .								
Apprentice carmen . . . .								
Tinner. . . . .								
Helper tinner. . . . .								
Totals. . .								

State here kind of work for men working on other than authorized work together with authority for same. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

State here individual number and kind of cars repaired and turned out of shop today :

KIND OF CAR	NUMBER.
_____	_____
_____	_____
_____	_____
_____	_____

Cars reported repaired should include only cars passing over the spot system.

CORRECT : \_\_\_\_\_

UNIT FOREMAN.

Fig. 5. — Daily report filled out by unit foreman for the car foreman.

THE BALTIMORE & OHIO RAILROAD COMPANY.  
Motive Power Department.

DAILY REPORT ON SEGREGATED FORCES AUTHORIZED TO BE ASSIGNED  
EXCLUSIVELY TO SPOT SYSTEM FREIGHT CARS REPAIRED.

STATION \_\_\_\_\_ DATE \_\_\_\_\_ 192 \_\_\_\_\_

CLASS OF CARS.	Authorized.					Men of authorized units actually working on class of car for which authorized.			Number of men of authorized units working on other work than for which authorized.	Number of cars repaired and turned out of shop today.
	Number of men.					Number.	Total one man hours worked.	Number of men reduced to basis of 8 hrs. per man.		
	Number of units.	Actually working today.	Absent today.	Positions vacant today.	Total.					
Box . . . . .										
Open top . . .										
Refrigerator .										
W-I. coke. . .										
Mill gondola .										
Caboose. . . .										

State here kind of work for men working on other than authorized work together with authority for same.

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State here individual numbers of cars repaired and turned out of shop today :

BOX.	OPEN TOP.	REFRIGERATOR.	W-I COKE.	MILL GOND.	CABOOSE.
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Cars reported repaired should include only cars passing over the spot system.

CORRECT : \_\_\_\_\_

CAR FOREMAN.

Fig. 6. — Daily report to the superintendent of the car department.



parts of the car above the underframe and apply one coat of paint after quitting time for the first shift. Wood cars: Apply the siding or side planks, fascia, roof, running board, metal strips to the bottom of the car siding and apply the first coat of paint after the quitting time of the first shift (1).

*Work at spot E* (designated with yellow bulletin). — Apply all safety appliances, hang and adjust the doors, repair the air brake and hand brake equip-

ment and apply the second coat of paint after quitting of the first shift.

*Work at spot F* (designated with black bulletin). — Make the final inspection of the cars, test and adjust the brakes and stencil and ship the cars.

During the period that the unit organization and spot system of freight car repairs has been in effect, it has been found to work effectively with the Baltimore & Ohio's plan of employee co-operation. Among the advantages claimed

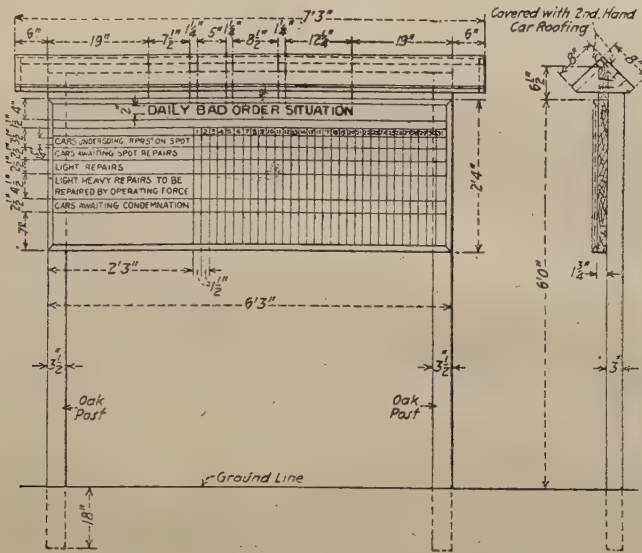


Fig. 7. — Bulletin showing daily report of bad order cars.

are the following : Happiness and satisfaction among the workmen with maximum production from each man each day, and a minimum loss of material due to damage and waste.

It further provides supervision that is both pleasing to the workmen and pro-

(1) Metal strips applied at the bottom of the siding and metal roofs shown as applied at Spot D, may be applied at Spot E.

ductive to the employer, because when advice is needed by the men, it can be promptly obtained, which makes the conditions under which the employee is working satisfactory.

It provides maximum safety for the workmen, because all of their work is performed at a designated spot where the required facilities and material are placed. It is unnecessary for any one to collect his own material and tools from scattered points in the plant, which

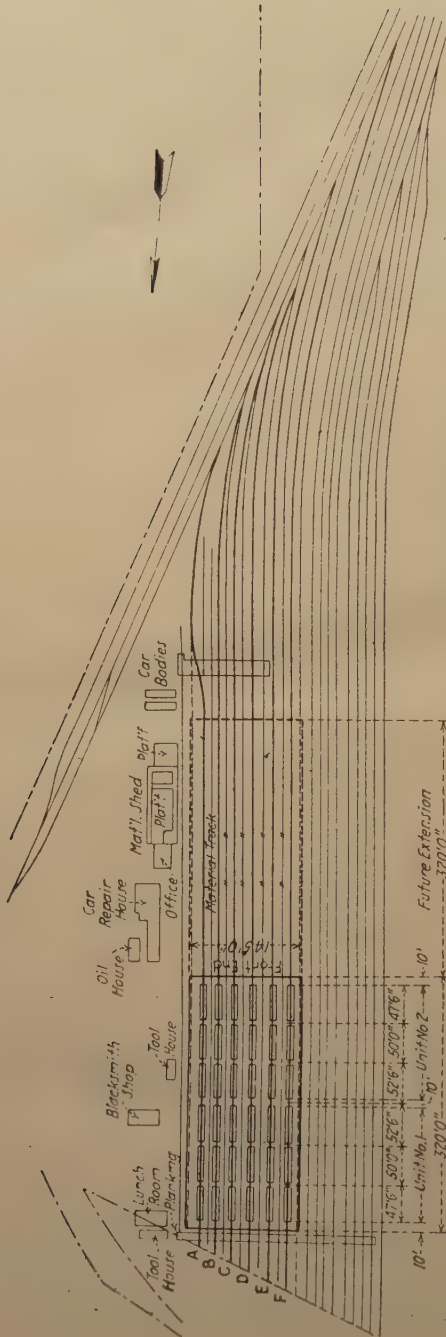


Fig. 8. — Layout of car repair shop and tracks for repairing wood cars.

may subject him to all the hazards that may exist on the property.

It provides for maximum conservation of material because all material used in the work performed at each spot is removed from the car and re-used at the spot where it is removed. When new material is needed it is placed at the spot by designated material men.

It provides a maximum production from each workman for the reason that he is stationed at a specified spot where all the material and facilities needed are furnished for him to use.

The unit organization and spot system encourages the employer to provide steady employment for the reason that it makes production cheaper than can be obtained through any other means, and provides for the satisfaction of his employees, because they are better able to produce satisfactorily.

Daily reports are made by each unit foreman to the car foreman in charge of the shop, on the form shown in figure 5. Daily reports are also made by the car foremen to the superintendent of the car department on the form shown in figure 6.

One or more weeks are allowed for one designated series or class of car to accumulate. During that time, the shop is kept busy repairing another series of cars. The foreman in charge of the shop is notified of the next series to go through the shop and the material is ordered and assembled at the proper spot ready for application. Thus, there is no delay in routing cars through a shop at any time.

Application for a patent on the system described in the preceding paragraphs was made by J. J. Tatum, general superintendent of the car department, Baltimore & Ohio, and filed 31 December 1923. The patent was granted 10 November 1925.

## Reconstruction of the Gare de l'Est, Paris.

Figs. 1 to 5, pp. 1086 to 1090.

(*Modern Transport.*)

One of the most interesting of the many examples of railway enterprise which are being furnished in France at the present time is the ambitious scheme for the total reconstruction and remodelling of the Paris terminus of the Chemins de fer de l'Est (Eastern Railway Company), some brief particulars of which were given in our issue of 9 June. Estimated to cost about £3 000 000 and to be completed by December 1931, the new works — as a glance at the accompanying illustrations will show — comprise the erection of a most imposing station building on the site of the existing Gare de l'Est, the provision of thirty platform lines in place of the present eighteen, and the extension of all the platforms to lengths varying from 900 feet to over 1 000 feet, so as to enable the longest trains to be accommodated.

### Continuous enlargement.

The Gare de l'Est, familiar to British travellers as the departure point in Paris for Switzerland and the Rhine countries, was first opened in 1855, at which time there were only two platform lines. Some years later two additional lines were added, while in 1878 the number was increased to eight and in 1889 to fourteen. At the latter date there were also added to the station buildings, on the Rue du Faubourg Saint-Martin side, the parcels distributing sheds and the customs depot. The next improvement of note took place in 1900, the year during which the Paris Exhibition (Exposition Universelle) was held, when the plat-

form lines, which now numbered sixteen, were lengthened. At the same time there were added a new luggage office and a covered vehicular roadway to the station. In 1923 the number of platform lines was increased to eighteen. This multiplication of platform lines followed a progressive increase in the number of passengers using the station. Thus, while in 1861 only one million passengers were handled annually, four millions passed through the station in 1889, eight and a half millions in 1900, and fourteen millions in 1913. During the war years, 1914-1918, there was, of course, a decrease, but immediately normal conditions were reached, which was about 1920, the upward trend set in again, with the result that twenty-five and a half million passengers used the Gare de l'Est during 1925. Moreover, while the station had, in 1902, to deal only with 6 200 passengers between the hours of 6 and 7 p.m. to-day 22 600 have to be handled during the same « rush » hour. This progressive increase in passenger traffic rendered the enlargement of the station an urgent and an immediate necessity.

### A comprehensive scheme.

The « Gare de l'Est », which at one time was commonly known as the Strasbourg Station, was originally laid out on strictly geometrical lines, an arrangement which has greatly facilitated the enlargements in the direction of the Rue du Faubourg Saint-Martin and Rue Lafayette. The work of reconstruction,





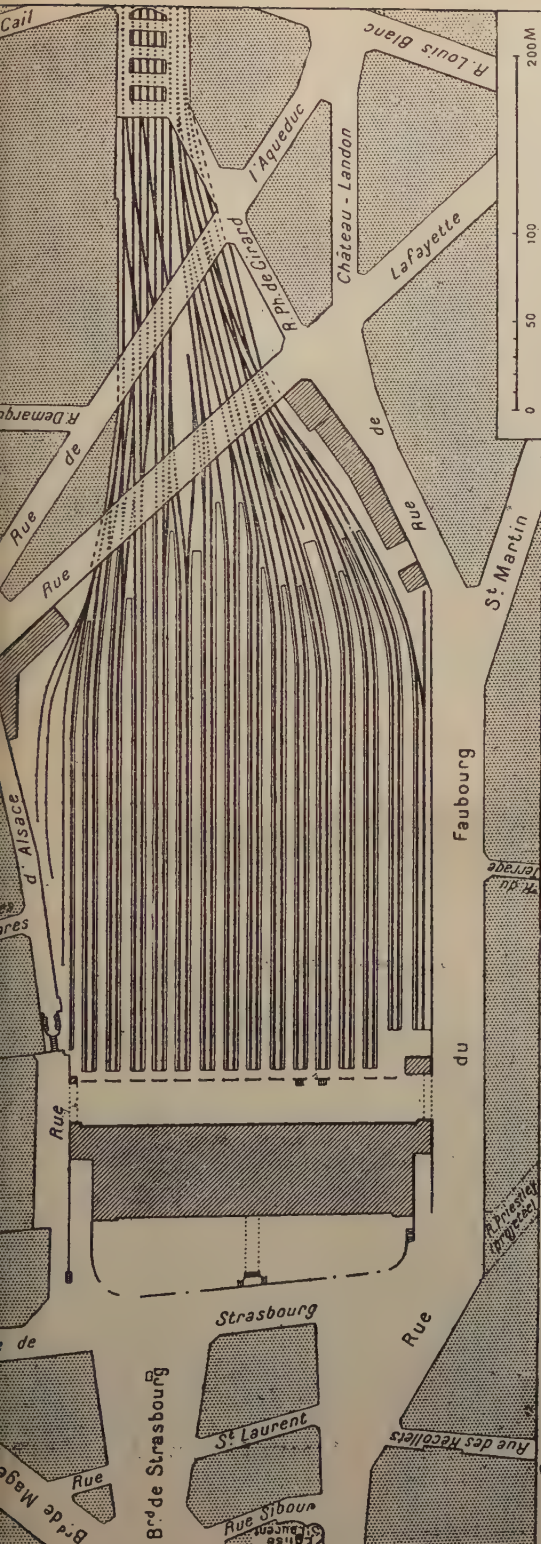


Fig. 4. — Cross section shewing (left foreground) the incoming baggage-room, and (right foreground) the subway to the street and to the Metropolitan Railway.

exactly similar building abutting the deviated Rue du Faubourg Saint-Martin. The intervening space, some 167 feet, will be occupied by a new structure harmonising with and joining the two main features of the building, while paralleling the façade will be a carriage road some 525 feet in length. The accommodation in the new station will include, on the ground floor, a main line departure hall (the existing station), a booking-hall for suburban traffic (the new building adjoining the Rue du Faubourg Saint-Martin), and, between them, a large hall for the handling of outgoing baggage. These three halls will give immediate access to the main circulating area, where waiting-rooms and a restaurant will be provided. As at present, direct access to the circulating area will be readily obtainable from the Rue d'Alsace and the Rue du Faubourg Saint-Martin. On the first lower floor, and communicating with the circulating area by two wide staircases, will be a hall leading to the adjacent Metropolitan Railway and a subway leading therefrom to the Rue de Strasbourg. On the same level will be provided lavatories, baths, hairdressing saloons, writing-rooms, telephone cabinets and a cloak-room. On the second lower floor will be accommodated the incoming luggage room, at each extremity of which will be access for motor vehicles. This room will be 656 feet long and 115 feet wide. The station offices, the inquiry and seat reservation bureaux and the sleeping car agency, together with a private postal and telegraph office, will be situated on the entresol floor, while on the first floor will be a restaurant with a terrace on the station forecourt. Attached to the restaurant, but on the second floor, will be provided rooms for the use of tourists.

#### Lines and platforms.

The arrangement of the thirty platform lines will be, generally speaking, as follows : To the left side of the station





Fig. 2. — The Gare de l'Est as it will appear when completed. The original facade

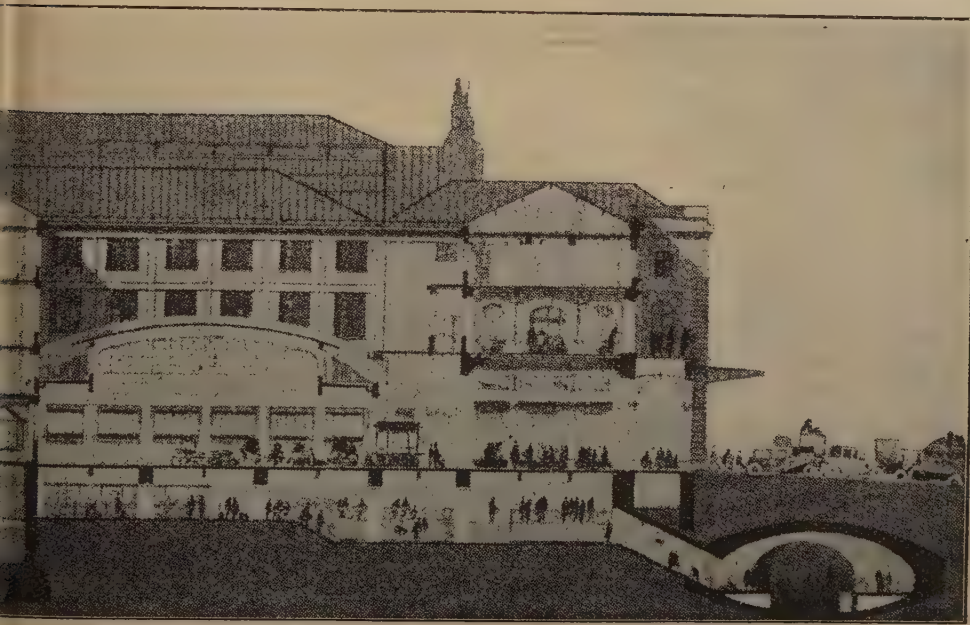


Fig. 3. — Cross-section shewing (left foreground) the incoming baggage road





he central hall and two wings will form only the left wing of the new building.



(right foreground) subways to the street and to the Metropolitan Railway.

will be ten departure lines for long-distance trains, while twelve lines in the centre will permit of an intensive suburban service, both arrival and departure. To the right-hand side of the station will be eight lines for long-distance train arrivals. Owing to the generous

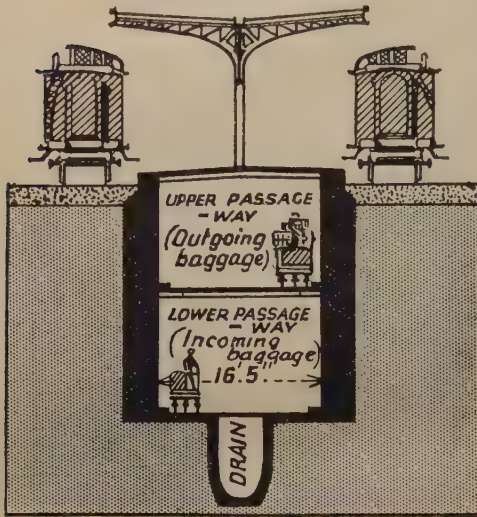


Fig. 5. — Sectional drawing of the proposed passageways for the expeditious handling by electric trucks of incoming and outgoing baggage.

provision of crossovers, it will, however, be possible to rearrange the use of the platforms should the necessity arise. The thirty lines will be served by fifteen covered platforms, these varying in width from about 21 ft. 4 in. to 23 feet, and in length from a little over 900 feet to 1 148 feet. The platforms will lead directly on to a circulating area, 82 feet wide, which gives access, on the one side, to exits to the Rue d'Alsace and the Rue du Faubourg Saint-Martin, and, on the other side, either to the Metropolitan Railway entrance and to the subway which leads to the Rue de Stras-

bourg, or to the subway approach to the incoming baggage room. So far as outgoing baggage is concerned, this will be handled by electric trucks which will run either on the platforms, as at present, or in an underground passage, 16 ft. 5 in. wide, which will be constructed under platform No. 10 and parallel thereto (fig. 5), and will effect a junction with a transverse passage of the same width which will be placed into communication with the departure platforms by means of luggage lifts. Incoming baggage will be trucked to the level of the incoming baggage room, which will be reached either by means of lifts descending directly into the room or by way of transverse and longitudinal passages which will be located, respectively, under the outgoing baggage passages. At the same time, baggage for long-distance trains will normally be handled by means of a moving platform arranged under the four end platforms.

#### Bridge reconstruction.

The entrance neck to the station, which now consists of six tracks (four main line and two shunting), is, as already mentioned, to be enlarged so as to accommodate six running roads and three shunting lines. This work has necessitated the demolition and reconstruction of three large bridges, known respectively as the Pont Lafayette, the Pont de l'Aqueduc, and the Pont Philippe de Girard. The Pont Lafayette was originally a steel structure having two spans, the width between the abutments being 259 ft. 2 in. The bridge, as reconstructed, is entirely of reinforced concrete, and, while its two spans have been retained, the total opening between abutments has been increased to 433 ft. 1 in., and it carries a total weight of 12 000 tons. This bridge, which is the most important of the three and which is crossed by the tramways, will very

shortly be opened to traffic. The Pont de l'Aqueduc is, and will continue to be, a metal structure. At present it has two unequal spans, with a total opening between abutments of 170 ft. 7 in. The new bridge will have one single span and the total opening will be increased to 344 ft. 6 in. The Pont Philippe de Girard was originally a stone structure, with a total length of 334 ft. 8 in., consisting of two tunnels running side by side and having, respectively, openings of 83 ft. 5 1/2 in. and 98 ft. 5 1/2 in. The two tunnels are now being opened out and replaced by a reinforced concrete bridge with a single span of 134 ft. 6 in. In the new bridge, as may be seen by reference to the drawing (fig. 4), four large air shafts are provided. Owing to the configuration of the arch of the new bridge, it has been necessary to provide particularly heavy abutments, and these have, for the most part, been built in beneath the adjoining property.

#### **Reconstruction without disorganisation.**

The planning of the reconstruction works was carried out by the late M. Descubes, chief of the works department, who died in the autumn of 1927. Apart from the fact that the designing of the new station building is noteworthy as a triumph of architectural skill, the works, as planned, have been, and are being, carried out without any disorganisation of the heavy traffic for which the station is noted, a circumstance which reflects the greatest credit upon the entire organisation. The reconstructed Gare de l'Est will be one of the largest railway termini in Europe, and we are much indebted to M. A. Henry, engineer-in-chief, way and works department, Chemins de fer de l'Est, Paris, for the information upon which this description is based and for the loan of drawings and photographs from which the accompanying illustrations have been prepared.



2 APPENDICES :

I. List of the Members  
of the Permanent Commission.

II. List of the questions  
for the Madrid (1930) Session  
with the names of the reporters.

OFFICIAL INFORMATION

ISSUED BY THE

PERMANENT COMMISSION

OF THE

INTERNATIONAL RAILWAY CONGRESS ASSOCIATION.

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Meeting of the Permanent Commission held on the 30 June 1928.

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The Permanent Commission of the International Railway Congress Association met on the 30 June 1928 at the Headquarters Offices of the Belgian Railway Company at Brussels, the President, Mr. E. FOULON, being in the chair.

Several members of the local organising Committee for the Madrid (1930) Congress also attended the meeting.

\* \* \*

I. — Since the last meeting of the Permanent Commission, Mr. MARCHI, General President of the Fascist Confederation of Land and Inland Water Transportation,

and Mr. TAMAKI, Secretary of the Japanese Ministry of Railways and Director of the Japanese State Railways office at Berlin,

were nominated members in place of Mr. TAJANI and Mr. IKEDA, who had resigned as a result of changes in their official positions.

Appendix I gives the present composition of the Permanent Commission.

\* \* \*

II. — The statement of receipts and expenditure for the year 1927, audited by an accountant, and the budget for the year 1928, were passed.

The variable part of the annual subscription of the member Administrations (article 17 of the statutes) remains unchanged for the year 1928, at the rate of 0.10 gold franc per kilometre, at which it has stood for several years.

\* \* \*

III. — The Spanish Government has sent to the Belgian Government through the usual diplomatic channels, the list of the persons who will constitute the local organising Committee for the Madrid Congress in 1930.

Those persons who form the Executive Committee of this Commission, in accordance with the last clause of article 6 of the statutes, have been nominated temporary members of the Permanent Commission (see appendix I).

\* \* \*

IV. — In agreement with the local Spanish Committee, the Permanent Commission has decided that the Session shall be held in May 1930. The opening date has been fixed for the 5th May and the closing date on the 15th May.

\* \* \*

V. — With the exception of the American reporters for questions III and XV<sup>(1)</sup>, all the reporters of the questions included in the programme for the Madrid Congress have been nominated.

The detailed questionnaires of enquiry drawn up by most of the reporters have been sent to the member administrations

who have been requested to complete them as soon as possible.

The reports should be in the hands of the Permanent Commission by the 1 March 1929 at the latest.

\* \* \*

VI. — The following alterations have taken place amongst the participating administrations since the last meeting :

#### ADMINISTRATIONS.

<i>Admissions :</i>	Kilom.	Miles.
Bulgarian State Railways.	2 285	1 420
Upper Congo to the Great African Lakes Railway.	763	474
<i>Resignations :</i>		
Missouri Pacific Railroad	11 824	7 347

The retirement of this important Company is due to its difficult position as a result of the damage done by the Mississippi floods.

The Congress Association at the present time includes 225 Administrations operating railways, having a total length of 523 632 kilometres (325 375 miles).

<i>The General Secretary,</i>	<i>The President,</i>
P. GHILAIN.	E. FOULON.

(1) These two reporters have just been nominated (October 1928) (see appendix II).

# LIST OF MEMBERS OF THE PERMANENT COMMISSION

## OF THE

### INTERNATIONAL RAILWAY CONGRESS ASSOCIATION

*President :*

E. **Foulon** <sup>(2)</sup>, directeur général de la Société Nationale des chemins de fer belges ; rue du Progrès, 74, Brussels.

*Vice-presidents :*

G. **Colson** <sup>(1)</sup>, membre de l'Institut, inspecteur général des ponts et chaussées, vice-président du Conseil d'État de France ; rue de Laplanche, 2, Paris ;

U. **Lamalle** <sup>(4)</sup>, directeur de l'Exploitation à la Société Nationale des chemins de fer belges ; rue de Louvain, 17, Brussels.

*Members of the Executive Committee :*

G. **Behrens** <sup>(2)</sup>, director, London Midland & Scottish Railway ; Chepstow street, 20, Manchester ;

The Right Hon. Sir Evelyn **Cecil** <sup>(3)</sup>, G. B. E., M. P., privy councillor, director, Southern Railway (Great Britain) ; Cadogan Square, 2, London, S. W. 1 ;

P. E. **Javary** <sup>(3)</sup>, directeur de l'Exploitation de la Compagnie du chemin de fer du Nord français ; rue de Dunkerque, 18, Paris.

*Ex-presidents of sessions, members ex-officio :*

The Right Hon. Viscount **Churchill**, G. C. V. O., chairman, Great Western Railway (Great Britain) ; Paddington Station, London, W. 2 ;

R. de **Corné**, ingénieur, président du conseil supérieur des travaux publics d'Italie ; Rome.

*Members :*

R. H. **Aishton** <sup>(2)</sup>, president, American Railway Association ; South Dearborn Street, 431, Chicago, Ill. ;

T. A. **Alstrup** <sup>(2)</sup>, directeur général des chemins de fer de l'État danois ; Gl. Kongevej, 1, Copenhagen ;

W. W. **Atterbury** <sup>(3)</sup>, president, Pennsylvania Railroad System ; Broad Street Station, Philadelphia, Pa. ;

G. **Behrens** (already named) ;

Sir Ernest Albert Seymour **Bell** <sup>(2)</sup>, Kt., C. I. E., member of the Boards of Directors, Bengal-Nagpur and South Indian Railway Companies ; Brooklands, Cobham (Surrey, England) ;

A. **Braem** <sup>(2)</sup>, conseiller à la Direction générale de la Société Nationale des chemins de fer belges ; rue de Louvain, 17, Brussels ;

J. **Castiau** <sup>(1)</sup>, directeur général au Ministère des chemins de fer, marine, postes, télégraphes, téléphones et aéronautique de Belgique (services de contrôle) ; rue de la Charité, 25, Brussels ;

H. **Caufriez** <sup>(3)</sup>, directeur général de la Société nationale belge des chemins de fer vicinaux ; rue de la Science, 14, Brussels ;

The Right Hon. Sir Evelyn **Cecil**, G. B. E., M. P., (already named) ;

The Right Hon. Viscount **Churchill**, G. C. V. O. (already named) ;

G. **Colson** (already named) ;

R. de **Corné** (already named) ;

Sir Francis **Dent** <sup>(2)</sup>, C. V. O., director, Southern Railway (Great Britain) ; Porthyfelin, Holyhead ;

A. **Fabris** <sup>(3)</sup>, ingénieur, chef du service du matériel et de la traction des Chemins de fer de l'État italien ; Villa Patrizi, Rome ;

F. **Fiori** <sup>(3)</sup>, ingénieur, administrateur des Chemins de fer de l'État italien, Rome ;

(<sup>1</sup>) Retires at the 11th session. — (<sup>2</sup>) Retires at the 12th session. — (<sup>3</sup>) Retires at the 13th session.



- M. Fontaneilles** <sup>(1)</sup>, inspecteur général des ponts et chaussées, président de la section des chemins de fer au Conseil général des ponts et chaussées de France; rue de Sèvres, 4, Paris;
- E. Foulon** (already named);
- Sir Henry Fowler** <sup>(1)</sup>, K. B. E., chief mechanical engineer, London Midland & Scottish Railway; Derby.
- A. Frank** <sup>(3)</sup>, ingénieur des ponts et chaussées, inspecteur au Ministère des Chemins de fer de Pologne; Warsaw;
- P. Ghilain** <sup>(4)</sup>, ingénieur principal au service du matériel de la Société Nationale des chemins de fer belges, rue du Progrès, 74, Brussels;
- Sir Guy Granet** <sup>(1)</sup>, G. B. E., chairman, London Midland & Scottish Railway; Lombard Street, 80, London, E. C. 3;
- A. Granholm** <sup>(4)</sup>, directeur général des Chemins de fer de l'État suédois; Stockholm;
- H. Hunziker** <sup>(3)</sup>, ingénieur, directeur de la division des chemins de fer du Département fédéral des postes et des chemins de fer suisses; Berne;
- C. W. Hurcomb** <sup>(3)</sup>, C. B., C. B. E., secretary to the Ministry of Transport (Great Britain); Whitehall Gardens, 6, London, S. W. 1;
- A. Jacques** <sup>(3)</sup>, directeur de la Voie à la Société Nationale des chemins de fer belges; rue de Louvain, 17, Brussels;
- P. E. Javary** (already named);
- E. Kejr** <sup>(2)</sup>, ingénieur, conseiller des constructions du département V/1 au Ministère des Chemins de fer de Tchécoslovaquie; Prague.
- G. Kunz** <sup>(3)</sup>, administrateur-délégué du Chemin de fer Berne-Lötschberg-Simplon; Berne;
- U. Lamalle** (already named);
- N...** <sup>(2)</sup> (France);
- L. F. Loree** <sup>(2)</sup>, president, Delaware & Hudson Railroad; Nassau Street, 32, New York City;
- A. Mange** <sup>(3)</sup>, administrateur de la Compagnie du chemin de fer de Paris à Orléans; rue de la Bienfaisance, 42, Paris;
- C. Marchi** <sup>(3)</sup>, député au parlement italien, président général de la Confederazione nazionale fascista dei trasporti terrestri e della navigazione interna; via Vittoria Colonna, 32, Rome;
- M. Margot** <sup>(2)</sup>, directeur général de la Compagnie des chemins de fer de Paris à Lyon et à la Méditerranée; rue Saint-Lazare, 88, Paris;
- E. Maristany** <sup>(2)</sup>, marquis d'Argentera, directeur général de la Compagnie des chemins de fer de Madrid à Saragosse et à Alicante; Estación de Atocha, Madrid.
- G. Mereutza** <sup>(1)</sup>, sous-directeur général des Chemins de fer roumains; Bucarest;
- G. Molle** <sup>(3)</sup>, secrétaire technique à la Direction générale de la Société Nationale des chemins de fer belges; rue de Louvain, 17, Brussels;
- C. Oddone** <sup>(2)</sup>, directeur général des Chemins de fer de l'État italien; Rome;
- J. R. Paul** <sup>(2)</sup>, directeur de la Compagnie des chemins de fer du Midi français; boulevard Haussmann, 54, Paris (IX<sup>e</sup>);
- G. Philippe** <sup>(2)</sup>, inspecteur général des lignes Nord belges; Liège;
- P. Riboud** <sup>(4)</sup>, directeur de la Compagnie des chemins de fer de l'Est français; rue d'Alsace, 21, Paris;
- A. Schrafl** <sup>(4)</sup>, président de la Direction générale des Chemins de fer fédéraux suisses; Berne;
- R. Schwob** <sup>(1)</sup>, directeur général des chemins de fer au Ministère des Travaux publics de France; 241, boulevard Saint-Germain, Paris;
- Abdul-Hamid Pacha Soliman** <sup>(1)</sup>, Ministre des communications d'Egypte; Cairo;
- Sir Josiah Stamp** <sup>(1)</sup>, G. B. E., D. Sc., president of the Executive, London Midland & Scottish Railway; Euston Station, London N. W. 1;
- J. J. Stieltjes** <sup>(2)</sup>, inspecteur général au Service de la surveillance des chemins de fer des Pays-Bas; the Hague;
- Y. Tamaki** <sup>(1)</sup>, Secretary to the Ministry of Railways (Japan) and manager of its Berlin office; Friedrich Ebert Strasse, 6, Berlin, W. 9;
- Sir Henry W. Thornton** <sup>(2)</sup>, chairman and president, Canadian National Railways; Montreal, Que.;
- Tsang Ou** <sup>(4)</sup>, directeur général adjoint du Chemin de fer du Lung-hai (China); rue de Mogador, 5, Paris;
- A. Valenciano y Mazerès** <sup>(1)</sup>, ingénieur en chef des ponts et chaussées, sous-directeur général des travaux publics et chef de la section des chemins de fer au Ministère du fomento (Spain); Calle de Piamonte, principal derecha, 14, Madrid;

(<sup>1</sup>) Retires at the 11th session. — (<sup>2</sup>) Retires at the 12th session. — (<sup>3</sup>) Retires at the 13th session.

Sir Ralph Lewis **Wedgwood** <sup>(3)</sup>, C. B., C. M. G.,  
chief general manager, London & North Eastern  
Railway; King's Cross Station, London, N. 4;

D. **Willard** <sup>(3)</sup>, chairman of the Board, American  
Railway Association; president, Baltimore & Ohio  
Railroad; Baltimore, Md.;

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*Administrative Councillor* : A. **Braem** (already named).

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SECRETARY'S OFFICE : rue du Progrès, 74, Brussels.

*General Secretary* : P. **Ghilain** (already named).

*Secretary-Treasurer* : J. **Habran**, directeur d'administration honoraire des Chemins de fer de l'État belge;

*Assistant secretaries* : R. **Desprets**, ingénieur principal à la Société Nationale des chemins de fer belges;

E. **Minsart**, ingénieur principal à la Société Nationale des chemins de fer belges.

SPANISH SECTION OF THE PERMANENT COMMISSION.

(Executive Committee of the local organising Commission of the eleventh session.)

*President* :

José Gaytan de **Ayala**, inspecteur général du Corps des ingénieurs des routes, canaux et ports; président de la section des chemins de fer du Conseil des travaux publics.

*Members* :

Antonio **Faquineto**, directeur général des chemins de fer et tramways;

Luis **Morales**, ingénieur en chef de 1<sup>re</sup> classe du Corps des ingénieurs des routes, canaux et ports, vice-président du Conseil supérieur des chemins de fer, président du Comité exécutif du dit Conseil;

Antonio **Valenciano**, administrateur de la Compagnie des chemins de fer de Madrid à Saragosse et à Alicante (member of the Permanent Commission);

Juan **Barceló**, ingénieur du Corps des ingénieurs des routes, canaux et ports, membre du Conseil supérieur des chemins de fer;

Félix **Boix**, administrateur-directeur de la Compagnie des chemins de fer du Nord de l'Espagne;

Alfredo **Baüer**, président du Conseil d'administration de la Compagnie des chemins de fer de Madrid à Saragosse et à Alicante;

Joaquin **Arteaga**, duc del Infantado, président du Conseil d'administration de la Compagnie des chemins de fer Andalous;

Estanislaó **Urquijo**, marquis de Urquijo, vice-président du Conseil d'administration de la Compagnie des chemins de fer du Nord de l'Espagne;

José **Moreno**, comte de Fontao, directeur-adjoint de la Compagnie des chemins de fer du Nord de l'Espagne;

Manuel Maria **Arrillaga**, sous-directeur de la Compagnie des chemins de fer de Madrid à Saragosse et à Alicante.

*Secretaries* :

Augusto **Krahe**, ingénieur des routes, canaux et ports, chef de l'Office d'information, de statistique et de publicité du Conseil supérieur des chemins de fer;

José Maria **Garcia-Lomas**, ingénieur attaché à la Direction de la Compagnie des chemins de fer du Nord de l'Espagne.

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(1) Retires at the 11th session. — (2) Retires at the 12th session. — (3) Retires at the 13th session.

## QUESTIONS

FOR DISCUSSION AT THE MADRID SESSION (1930)

WITH

### THE NAMES OF THE REPORTERS

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#### I<sup>st</sup> SECTION : WAY AND WORKS.

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##### I. — The use of concrete and reinforced concrete on railways.

A) Investigation into the respective merits of the different designs of concrete sleeper.

B) Concrete and reinforced concrete buildings.

##### *Reporters :*

*America, Great Britain, Dominions and Colonies, China and Japan.* — Mr. FREEMAN (F. B.), chief engineer, New York Central Railroad Company; 466, Lexington Avenue, New York.

*Belgium, France, Italy, Portugal, Spain and their Colonies and Switzerland.* — Mr. JULLIEN, ingénieur en chef de la voie et des travaux de la Compagnie du Chemin de fer de Paris à Orléans, place Valhubert, 1, Paris (13<sup>e</sup>), and Mr. CLAISE, directeur du contrôle des travaux des lignes nouvelles et de la voie et des bâtiments au Ministère des travaux publics de France, boulevard Saint-Germain, 244, Paris.

*Other countries.* — Mr. KRICK (E.), ingénieur, inspecteur de la Direction générale des Chemins de fer de l'Etat des Serbes, Croates et Slovènes; 11, rue Frankopanova, Belgrade.



## II. — Resistance of rails against breakage and to wear.

A) First causes of rail breakage ; measures taken to reduce the number of breakages, both as regards the way rails are used and the conditions of inspection.

B) Quality of metal used for rails to give normal wear. Conditions governing manufacture and inspection.

Rails : profile and quality, length, weight, and cross section of the rails.

C) Rail joints. The most economical and efficient design.

### Reporters :

*America.* — Mr. ABBOTT (R. B.), assistant general superintendent, Reading Company; Reading, Pa.

*Great Britain, Dominions and Colonies, China and Japan.* — Dr. S. MATSUNAWA, doctor of engineering, chief of the railway research Office of the Japanese Government Railways; Tokyo.

*Other countries.* — Mr. CAMBOURNAC, ingénieur des Ponts et Chaussées, ingénieur en chef des études, matériel des voies et bâtiments de la Compagnie du Chemin de fer du Nord français, rue de Dunkerque, 18, Paris (10\*), and Mr. PATTE, ingénieur en chef attaché au service central de la voie de la Compagnie des Chemins de fer de l'Est français, rue d'Alsace, 23, Paris (10\*).

## III. — Investigation into the static and dynamic stresses in railway bridges.

### Reporters :

*America.* — Mr. LANG (P. G.), Jr., engineer of bridges, Baltimore & Ohio Railroad; Baltimore, Md.

*Great Britain, Dominions and Colonies, China and Japan.* — Sir Henry FOWLER, K. B. E., chief mechanical engineer, London Midland & Scottish Railway (member of the Permanent Commission), Derby, and Mr. ELLSON (G.), engineer, Southern Company, Waterloo, London, S. E.

*Belgium, France and their Colonies.* — Mr. RONSSE (A. A. C.), ingénieur en chef, and Mr. DESPRETS (R.), ingénieur principal, both at the Société nationale des Chemins de fer belges; rue de Louvain, 17, Brussels.

*Other countries.* — Mr. FAVA (Alberto), ingénieur, inspecteur en chef supérieur au service de la voie des Chemins de fer de l'Etat italien; villa Patrizi, Rome.

## IV. — Recent improvements in permanent way tools, and in the scientific organisation of maintenance work.

### Reporters :

*America, Great Britain, Dominions and Colonies, Holland and Colonies, China and Japan.* — Mr. DRIESSEN (Ch. H. J.), chef de division des Chemins de fer néerlandais; Utrecht.

*Belgium, France, Italy, Portugal, Spain and their Colonies.* — Mr. MENDIZABAL (Domingo), ingénieur, sous-chef de la voie de la Compagnie des Chemins de fer de Madrid à Saragosse et à Alicante; Red Antigua, Pacifico, 2, Madrid.

*Other countries.* — Mr. HAUER (Jaun), ingénieur, conseiller ministériel et chef du Département IV/3 au Ministère des chemins de fer de Tchécoslovaquie; Prague.

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## II<sup>nd</sup> SECTION : LOCOMOTIVES AND ROLLING STOCK.

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### V. — Locomotives of new types; in particular, turbine locomotives and internal combustion motor locomotives.

Construction, efficiency, use and repair.

#### *Reporters :*

*America.* — Mr. LIPETZ (A.), consulting engineer, American Locomotive Company; Schenectady, N. Y.

*Great Britain, Dominions and Colonies, China and Japan.* — Mr. MAUNSELL (R.E.L.), C. B. E., chief mechanical engineer, Southern Railway; Waterloo Station, London, S. E. 1.

*Belgium, France, Italy, Portugal, Spain and their Colonies.* — Mr. COSSART, ingénieur en chef des ateliers de machines à la Compagnie du Chemin de fer du Nord français; rue des Poissonniers, 78, Paris (18°).

*Other countries.* — Mr. KOLLER (Paul), ingénieur, conseiller ministériel, sous-directeur des Chemins de fer de l'Etat tchécoslovaque, Direction Praha-Jih; Prague.

### VI. — Improvements in the steam locomotive.

Increased pressures and higher superheats. Improvements in the design of superheaters and parts connected with superheating. Feed water heating and air preheating. Improvement of valve gears.

#### *Reporters :*

*America.* — Mr. LENTZ (W. L.), engineer, motive power, New York Central Railroad Company; 466, Lexington Avenue, New York.

*Great Britain, Dominions and Colonies, China and Japan.* — Mr. GRESLEY (H. N.), chief mechanical engineer, London & North Eastern Railway; King's Cross, London, N.

*France, Italy, Portugal, Spain and their Colonies.* — Mr. PARMANTIER, ingénieur principal attaché au service central du matériel et de la traction de la Compagnie des Chemins de fer de Paris à Lyon et à la Méditerranée; boulevard Diderot, 20, Paris (12°).

*Other countries.* — Mr. BALS (Théodore), inspecteur général des Chemins de fer de l'Etat roumain; Strada Sébastopol, 12, Bucarest.

## VII. — Electric locomotives for main line traction.

a) passenger locomotives ; b) goods locomotives ; c) locomotives for mountainous country. Multiple unit traction.

### Reporters :

*America.* — Mr. DUER (J. V. B.), electrical engineer, operating department, Pennsylvania Railroad; Altoona, Pa.

*Great Britain, Dominions and Colonies, China and Japan.* — Dr. K. ASAKURA, chief of machinery and rolling stock section, bureau of mechanical engineering, Japanese Government Railways, Tokyo, and Dr. H. IMAIDZUMI, chief engineer of machinery and rolling stock section, bureau of mechanical engineering, Japanese Government Railways, Tokyo.

*France and Colonies.* — Mr. DE BOYSSON, ingénieur en chef du matériel et de la traction de la Compagnie du Chemin de fer de Paris à Orléans, boulevard de la Gare, 41, Paris, and Mr. LEROUCHER, ingénieur en chef des services techniques du matériel et de la traction de la Compagnie des Chemins de fer du Midi français, rue Théodore de Banville, 19, Paris.

*Other countries.* — Mr. BIANCHI (Giuseppe), ingénieur, inspecteur en chef au service du matériel et de la traction des Chemins de fer de l'Etat italien ; Florence.

## VIII. — All steel coaches. — Comparison with vehicles built of wood.

### Reporters :

*America, Great Britain, Dominions and Colonies, China and Japan.* — Mr. LEMON (E. J. H.), carriage and wagon superintendent, London Midland & Scottish Company ; Derby.

*Belgium, France and their Colonies.* — Mr. LANCRENON, chef adjoint des services du matériel roulant de la Compagnie du Chemin de fer du Nord français, rue des Poissonniers, 78, Paris, and Mr. VALLANCIEN, ingénieur principal à l'Office central d'études de matériel de chemins de fer, avenue de Suffren, 100-102, Paris.

*Other countries.* — Mr. GARCIA-VARO (Martin), ingénieur à la Compagnie des Chemins de fer Andalous, Malaga, and Mr. FRAILE (Pablo), sous-chef du service du matériel roulant de la Compagnie des Chemins de fer du Nord de l'Espagne, Estación del Norte, Madrid.

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## III<sup>rd</sup> SECTION : WORKING.

### IX. — Relations between railways and sea ports.

Lay-out of maritime stations ; arrangement of outer and inner basins so that the most efficient lay-out of sidings may be provided for working them ; operating and rate fixing methods ; loading and discharging appliances.

### Reporters :

*America, Great Britain, Dominions and Colonies, China and Japan.* — Mr. JENKIN JONES (C. M.), superintendent, North Eastern Area, London & North Eastern Railway ; York.



*Belgium, France and their Colonies.* — Mr. LAMALLE (U.), directeur de l'Exploitation à la Société nationale des chemins de fer belges (member of the Permanent Commission); rue de Louvain, 17, Brussels.

*Other countries.* — Mr. EHRENFREUND (Edilio), ingénieur, chef d'arrondissement des Chemins de fer de l'Etat italien, Turin, and Mr. BELMONTE (Ludovico), ingénieur, inspecteur en chef supérieur au service de l'exploitation des Chemins de fer de l'Etat italien, villa Patrizi, Rome.

**X. — Methods to be used in marshalling yards to control the speed of vehicles being shunted, and to ensure they travel on to the lines in the various groups of sidings.**

*Reporters :*

*America, Great Britain, Dominions and Colonies, China and Japan.* — Mr. BYROM (C. R.), chief general superintendent, London Midland & Scottish Railway; Derby.

*France, Italy, Portugal, Spain and their Colonies.* — Mr. PELLARIN, ingénieur en chef adjoint à l'ingénieur en chef de l'exploitation de la Compagnie des Chemins de fer de l'Est français, rue Madame, 1, Paris, and Mr. FARENC, sous-chef de l'exploitation de la Compagnie des Chemins de fer du Midi français, boulevard Haussmann, 54, Paris (9<sup>e</sup>).

*Other countries.* — Mr. FIALA (Ctibor), ingénieur, conseiller principal au Département VI/I du Ministère des chemins de fer de Tchécoslovaquie; Prague.

**XI. — Signalling of lines for fast traffic and in main stations.  
Daylight signals. Automatic block system.**

*Reporters :*

*America, Great Britain, Dominions and Colonies, China and Japan.* — Mr. DRYDEN (G. H.), signal engineer, Baltimore & Ohio Railroad; Baltimore, Md.

*Belgium, France and their Colonies.* — Mr. WILLAERT (C. C. A.), ingénieur principal au service de la voie à la Société nationale des chemins de fer belges; rue de Louvain, 17, Brussels.

*Italy, Portugal, Spain and their Colonies.* — Mr. GIBERT (Antonio), ingénieur en chef des services électriques de la Compagnie des Chemins de fer de Madrid à Saragosse et à Alicante, Pacifico, 2, Madrid, and Mr. NOGUÈS (Julio), ingénieur en chef-adjoint du mouvement de la même Compagnie, Red Catalana, Estacion de Francia, Barcelona.

*Other countries.* — Mr. KRISTENSEN (J.), ingénieur des Chemins de fer de l'Etat danois; Copenhague.

**XII. — Economical traction methods for use in particular cases, as for example :**

A) Organisation of train services on the minor lines of the large systems carrying little traffic, and of little used trains on the more important lines of these systems.

B) Use of special tractors for shunting in smaller yards and for certain work in large yards.

*Reporters :*

*America.* — Mr. VOORHEES (H. B.), general manager, Western Lines, Baltimore & Ohio Railroad, Cincinnati, O., and Mr. EMERSON (Geo. H.), chief of motive power and equipment, Baltimore & Ohio Railroad, Baltimore, Md.

*Great Britain, Dominions and Colonies, China and Japan.* — Mr. NICHOLLS (R. H.), superintendent of the Line, Great Western Railway; Paddington Station, London, W. 2.

*Belgium, France, Italy, Portugal, Spain and their Colonies.* — Mr. GAEREMYNCK (O. A.), ingénieur principal au service de l'exploitation de la Société nationale des chemins de fer belges; rue de Louvain, 17, Brussels.

*Other countries.* — Mr. HUNZIKER (H.), directeur de la section des chemins de fer du Département fédéral des postes et des chemins de fer suisses (member of the Permanent Commission); Berne.

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IV<sup>th</sup> SECTION : GENERAL.

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**XIII. — Competition of road transport.**

Effect of road competition on goods and passenger traffic and the best methods of meeting such competition, both as regards the main lines and the branches.

*Reporters :*

*America, China and Japan.* — Mr. SUDBOROUGH (C. B.), assistant vice-president in charge of traffic, Pennsylvania Railroad; Broad Street Station, Philadelphia, Pa.

*Great Britain, Dominions and Colonies.* — Mr. WILKINSON (H. L.), assistant superintendent of the Line, Great Western Railway; Paddington, London, W.

*Belgium, France, Italy, Portugal, Spain and their Colonies.* — Mr. LE BESNERAIS, chef adjoint de l'exploitation de la Compagnie du Chemin de fer du Nord français, rue de Dunkerque, 18, Paris (10<sup>e</sup>), and Mr. DEGARDIN, ingénieur principal au service central de l'exploitation de la Compagnie du Chemin de fer de Paris à Orléans, place Valhubert, 1, Paris (13<sup>e</sup>).

*Other countries.* — Dr. Alexandre WASIUTYŃSKI, ingénieur des voies de communication, président de la Commission pour la reconstruction des gares terminales de Varsovie; Ministère des voies de communication, Nowy Swiat, 14, Warsaw.

**XIV. — Use in railway work of machines for simplifying statistical and accountancy work.**

*Reporters :*

*America, Great Britain, Dominions and Colonies, China and Japan.* — Mr. EPPLER (W. E.), comptroller, Delaware and Hudson Company; Nassau Street, 32, New York.

*Other countries.* — Mr. BRUNEAU, ingénieur en chef adjoint au chef de l'exploitation de la Compagnie des Chemins de fer du Midi français, boulevard Haussmann, 54, Paris (9<sup>e</sup>), and Mr. D'WELLES, ingénieur en chef du service central de l'exploitation de la Compagnie du Chemin de fer de Paris à Orléans, place Valhubert, 1, Paris (13<sup>e</sup>).

**XV. — Co-operation of the staff towards increased efficiency and its participating in the profits.**

*Reporters :*

*America, Great Britain, Dominions and Colonies, China and Japan.* — Mr. COOK (C. C.), maintenance engineer of the Baltimore & Ohio Railroad; Baltimore, Md.

*Belgium, France and their Colonies.* — Mr. SOULEZ, ingénieur en chef attaché à la Direction de l'exploitation de la Compagnie du Chemin de fer du Nord français, rue d'Amsterdam, 65, Paris (8<sup>e</sup>), and Mr. BLOCH, ingénieur en chef du service du matériel et des ateliers de la Compagnie du Chemin de fer de Paris à Orléans, boulevard de la Gare, 41, Paris (13<sup>e</sup>).

*Other countries.* — Mr. DEL CAMPO (Rafael Marin), ingénieur du Conseil d'administration de la Compagnie des Chemins de fer de Madrid à Saragosse et à Alicante, and Mr. DEL CASTILLO (Jean Cánovas), ingénieur principal de la Direction de la même Compagnie; Pacifico, 2, Madrid.

**XVI. — Methods followed in training of staff, professional, technical and ordinary working grades.**

*Reporters :*

*America, Great Britain, Dominions and Colonies, China and Japan.* — Mr. L. C. FRITCH, vice-president, Chicago, Rock Island & Pacific Railroad; La Salle Street Station, Chicago, Ill.

*Belgium, France, Holland, Italy, Portugal, Spain and their Colonies.* — Mr. BARTH, ingénieur principal attaché à la Direction de la Compagnie des Chemins de fer de l'Est français; rue d'Alsace, 21, Paris (10<sup>e</sup>).

*Other countries.* — Mr. MEREUTZA, sous-directeur général des Chemins de fer de l'Etat roumain (member of the Permanent Commission); Bucarest.



V<sup>th</sup> SECTION : LIGHT RAILWAYS AND COLONIAL RAILWAYS.

**XVII. — Penetration railways.**

Construction :

- a) Penetration railways in new countries.
- b) Feeder railways in all countries

*Reporters :*

*America, Great Britain, Dominions and Colonies, China and Japan.* — Sir Ashley BIGGS, agent (general manager) of the Madras and Southern Mahratta Railway, Rayapuram (India), and Mr. LLOYD JONES (C. W.), C. I. E., agent (general manager) of His Exalted Highness the Nizam's Guaranteed State Railway, Secunderabad (India).

*Belgium, France, Holland, Portugal, Spain and their Colonies.* — Mr. JOURDAIN (Pierre), administrateur-directeur des Chemins de fer secondaires du Nord-Est; rue de Miromesnil, 33, Paris.

*Other countries.* — Mr. MELLINI (Enrico), ingénieur, inspecteur en chef à l'Inspection générale des chemins de fer, tramways et automobiles; 18, rue Tomassetti, Rome.

**XVIII. — Improvements in the permanent way equipment of light railways.**

*Reporters :*

*Europe.* — Mr. VAN NOORBEECK, inspecteur général des voies et travaux à la Société nationale belge des chemins de fer vicinaux; avenue des Celtes, 52, Brussels.

*Other countries.* — Mostapha Bey Hamdy EL KATTAN, chef-ingénieur adjoint de la voie des Chemins de fer de l'Etat égyptien; Cairo.

**XIX. — Electrification of secondary lines.**

*Reporters :*

*Europe.* — Mr. SEKUTOWICZ, directeur des services techniques de l'Omnium Lyonnais; rue d'Athènes, 20, Paris (9<sup>e</sup>).

*Other countries.* — Mr. RIVERA (D. Eugenio), ingénieur des Ponts et Chaussées d'Espagne, directeur-général du Chemin de fer de Tanger à Fez, Olózaga, 2, Madrid, and Mr. GARCIA-LOMAS (José-Maria), ingénieur attaché à la Direction des Chemins de fer du Nord de l'Espagne, Estación del Norte, Madrid.

**XX. — Rail motor vehicles.**

*Reporters :*

*Europe (except France).* — Mr. ZAVADJIL (Z.), ingénieur, chef de la division des machines de la Direction générale des Chemins de fer de l'Etat du royaume des Serbes, Croates et Slovènes; Belgrade.

*France.* — Mr. BEGHIN (Paul), sous-directeur de la Compagnie des Chemins de fer Départementaux; avenue de Friedland, 10, Paris (8<sup>e</sup>).

*Other countries.* — Mr. BROOKS (C. E.), chief of motive power, and Mr. GAGE (R. S.), chief electrical engineer, Canadian National Railways; Montreal, Que.

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# MONTHLY BIBLIOGRAPHY OF RAILWAYS <sup>(1)</sup>

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## I. — BOOKS.

### In French.

1927 625 .7 (06  
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DES CONGRÈS DE LA ROUTE.

Compte rendu des travaux du V<sup>e</sup> Congrès international de la route. Milan 1926.  
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Cours de mécanique appliquée aux machines professés à l'Ecole spéciale du génie civil de Gand. 3<sup>e</sup> volume : Théorie des machines thermiques. 4<sup>e</sup> édition, mise à jour par G. Van Engelen, professeur à l'Université de Gand.

Paris. Albin Michel, éditeur, 22, rue Huyghens.  
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1927 62. (01  
MURDE (M.), ingénieur des travaux publics de l'Etat.  
Manuel des travaux publics. Résistance des matériaux.  
Paris (6<sup>e</sup>), J.-B. Baillière et fils, 19, rue Hautefeuille.  
8-3 (11×16 cm.), de 371 pages avec 124 fig. (Prix : 18 francs.)

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Leipzig und Berlin, R. Oldenburg. 219 Seiten & Abb.  
Preis : 10 Rm.)

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Berlin. W. 35. Verlag von Bornträger. Heft I, 14 Seiten mit 8 Tabellen. Heft 2, 8 Tabellen. (Preis : 6.75 Rm.)

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Die Entwicklung der selbsttätigen Einkammer-Druckluftbremse bei den europäischen Vollbahnen.

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Mehrstielige Rahmen.

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Übersicht über den Waggonbau. Ein Hilfs- u. Nachschlagebuch für Waggonbauer, Verkehrstechniker u. a.  
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STRASSNER (A.).  
Neuere Methoden zur Statik der Rahmentragwerke.  
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3, Amen Corner (11 1/4 × 9 × 1 inches), 391 pages.  
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London, E. C. 4, Wells, Gardner, Darton & Co., Ltd.,  
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BOGEN (Jules I.).  
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New York and London, Isaac Pitman & Sons. (5  
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New York and London, Mc Graw-Hill Book Co. (6 × 9 inches), 363 pages, 8 plates and 150 text illust., 24 ta-  
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 London, H. M. Stationery Office, 16 pages. (Price :  
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**WARNOCK (F. V.).**  
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 London, Sir Isaac Pitman & Sons, Limited. (Price :  
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**YOUNG (George), Jr., professor of architecture, & BAXTER (Hubert Eugene), assistant professor of architecture.**  
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 New York, The Macmillan Co. (6 × 9 inches), 451 pa-  
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 El túnel submarino del Estrecho del Gibraltar.  
 Madrid, Editorial Voluntad S. A. In-8°, 400 paginas.  
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 Manuale pratico per l'impiego del cemento armato.  
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 tiche.

Milano. Ulrico Hoepli, editore. In-16. Vol. I, 960 pa-  
 gine, con 396 incisioni, legato. (Prezzo : 52 lire.). Vol. II,  
 900 pagine, con 250 incisioni, legato. (Prezzo : 48 lire.)

1927 621 .33 (.45)  
**FERROVIE DELLO STATO.**  
 La trazione elettrica sulle ferrovie italiane.  
 Roma. (24 × 16 cm.), 194 pagine, fig. & 3 tavole.

1927 385. (02)  
**TAJANI (F.).**

Trattato moderno di materiale mobile ed esercizio  
 delle ferrovie. Vol. I : Legislazione ed economia ferro-  
 viaria. Trazione e materiale mobile. Seconda edizione  
 riveduta ed ampliata.

Milano. Libreria editrice politecnica. (25 × 18 cm.),  
 512 pagine, 333 fig. & 1 tavola.

[ 016.855. (05) ]

## II. — PERIODICALS.

### In French.

#### Bulletin de la Société d'encouragement pour l'industrie nationale. (Paris.)

1927 656 .23 (.44)

Bull. de la Soc. d'enc. p<sup>r</sup> l'ind. nat., oct., p. 684.

BLOCH (R.). — La vie chère : les voyages et les tarifs de transports ferroviaires. (7000 mots & tableaux.)

#### Bulletin de la Société des ingénieurs civils de France. (Paris.)

1927 625 .212

Bull. de la Soc. des ing. civ. de France, juil.-août, p. 868.

DELPUECH (P.). — Effets du bandage conique et de la forme du rail dans le mouvement de l'essieu isolé. (3 600 mots & fig.)

#### Bulletin des transports internationaux par chemins de fer. (Berne.)

1927 347 .763.4 (.44)

Bull. des transp. intern. par ch. de fer, nov., p. 369.

L'introduction, en Alsace et en Lorraine, de la législation commerciale française sur les chemins de fer après l'armistice. (2 300 mots.)

1927 313 .385 (.492)

Bull. des transp. intern. par ch. de fer, nov. p. 389.

Statistique des chemins de fer néerlandais pour les années 1925 et 1926. (400 mots et tableau.)

1927 385 .63 (.4)

Bull. des transp. intern. par ch. de fer, nov., p. 145.

Convention internationale concernant le transport des marchandises par chemins de fer (C. I. M.), signée à Berne, le 23 octobre 1924, par l'Allemagne, l'Autriche, la Belgique, la Bulgarie, le Danemark, la ville libre de Dantzig, l'Espagne, l'Estonie, la Finlande, la France, la Grèce, la Hongrie, l'Italie, la Lettonie, la Lithuanie, le Luxembourg, la Norvège, les Pays-Bas, la Pologne, le Portugal, la Roumanie, le Royaume des Serbes, Croates et Slovènes, la Suède, la Suisse et la Tchécoslovaquie. (28 600 mots.)

#### Bulletin de l'Union internationale des chemins de fer (Paris).

1927 621 .33 (.42)

Bull. de l'Union intern. des ch. de fer, oct., p. 381.

Progrès de l'électrification sur les chemins de fer de Grande-Bretagne. (8 400 mots, 1 tableau & fig.)

#### Chronique des transports. (Paris.)

1927 385. (09.3 (.43)

Chronique des transports, n° 21, 10 nov., p. 2.

Les chemins de fer allemands et la guerre. (850 mots.)

1927

385 .113 (.7

Chronique des transports, n° 21, 10 nov., p. 26.

Les chemins de fer de l'Etat chinois en 1923 et 1924. (450 mots.)

1927

625 .216 (.7

Chronique des transports, n° 22, 25 nov., p. 2.

La question de l'attelage automatique. (900 mots.)

#### Génie civil. (Paris.)

1927

62.

Génie civil, n° 2362, 19 novembre, p. 504.

WOLKOWITSCH (D.). — Propriété des lignes de fluence dans les systèmes hyperstatiques. (4 200 mots & fig.)

1927

656 .

Génie civil, n° 2362, 19 novembre, p. 516.

CHOUQUET (C.). — Désengageur électromécanique rotatif pour signaux de chemins de fer. (900 mots & fig.)

1927

621 .

Génie civil, n° 2362, 19 novembre, p. 518.

ROUX (A.). — Le contrôle des soudures par les courants magnétiques. (600 mots & fig.)

1927

62.

Génie civil, n° 2363, 26 novembre, p. 532.

RENGADE (E.). — L'action des eaux très pures sur le ciment. (3 200 mots & fig.)

1927

624 .52 (.7

Génie civil, n° 2363, 26 novembre, p. 534.

CAUFOURIER (P.). — Le pont suspendu rigide de Florianopolis (Brésil). (3 600 mots & fig.)

1927

624 .2 (01 & 624 .5

Génie civil, n° 2364, 3 décembre, p. 558.

PERRET (G.) & MARCILHACY (B.). — Recherches sur le calcul des poutres de rigidité dans les ponts suspendus. (1 600 mots & fig.)

1927

625 .13 (.7

Génie civil, n° 2364, 3 décembre, p. 568.

Réparation du tunnel du chemin de fer d'Orléans, entre la gare du Quai d'Orsay, à Paris. (1 200 mots & fig.)

#### La Science et la Vie. (Paris.)

1927

656 .254 (.7

La Science et la Vie, décembre, p. 519.

FOURNIER (L.). — Un réseau téléphonique européen est en voie de construction. (3 100 mots & fig.)

## Les chemins de fer et les tramways. (Paris.)

1927 656 .254  
Les ch. de fer et les tramw., novembre, p. 207.

L'emploi du téléphone dans les chemins de fer. (2 400 mots.)

1927 625 .26  
Les ch. de fer et les tramw., novembre, p. 209.

Procédé économique pour la réparation des wagons. (2 400 mots & fig.)

1927 621 .133.4  
Les ch. de fer et les tramw., novembre, p. 214.

Moulage au trousseau d'une cheminée de locomotive. (650 mots & fig.)

1927 621 .335 (.71) & 621 .43 (.71)  
Les ch. de fer et les tramw., novembre, p. 217.

Automotrices Diesel-électriques des Canadian National Railways. (1 900 mots.)

## L'Industrie des voies ferrées et des transports automobiles. (Paris.)

1927 385 .13 (.44) & 656 .23 (.44)  
L'Ind. voies ferrées et transp. autom., oct., p. 423.

THEVENEZ (R.). — La répercussion de l'impôt sur les transports et des majorations de tarifs sur les recettes des grands réseaux en 1926. (3 300 mots & 2 tableaux.)

1927 625 .251  
L'Ind. voies ferrées et transp. autom., oct., p. 426.

RESAL. — Freinage continu des trains de marchandises. (4 000 mots.)

## Revue C. F. F. (Berne).

1927 621 .33 (.494)  
Revue C. F. F., novembre-décembre, p. 9.

JOBIN (A.). — L'électrification du réseau des Chemins de fer fédéraux. (2 800 mots, 2 tableaux & fig.)

## Revue de l'Ecole polytechnique. (Bruxelles.)

1927 69. (01)  
Revue de l'Ecole polytechnique, novembre, p. 72.

GYSEN (E.). — Le principe du travail virtuel ou des déplacements virtuels appliqué à la stabilité des constructions. (1 500 mots & fig.)

1927 621 .33  
Revue de l'Ecole polytechnique, novembre, p. 81.

KERCHOVE (R. de). — La traction électrique pour les chemins de fer à grand rayon d'action. (4 200 mots & tableaux.)

## Revue générale des chemins de fer. (Paris.)

1927 621 .133.1 (.44)  
Revue générale des ch. de fer, novembre, p. 447.

GODFERNAUX (R.). — Le charbon dans les chemins de fer en France. (5 100 mots & 1 tableau.)

1927 656 .223.2 (.44)  
Revue générale des ch. de fer, novembre, p. 456.

COLLOT. — Office central du mouvement des wagons commun aux Grands Réseaux français. (6 300 mots & fig.)

1927 621 .132.1 (.43)  
Revue générale des ch. de fer, novembre, p. 497.

HARCAVI (G.). — La standardisation des locomotives unifiées à la Compagnie des chemins de fer allemands. (4 000 mots, 1 tableau & fig.)

## Revue politique et parlementaire. (Paris.)

1927 385 .113 (.44)  
Revue politique et parlementaire, 10 nov., p. 326.

ALLIX (G.). — Une période critique pour les chemins de fer. (4 000 mots.)

## Revue universelle des mines, de la métallurgie, des travaux publics, des sciences et des arts appliqués à l'industrie. (Liège.)

1927 669 .1  
Revue universelle des mines, n° 4, 15 nov., p. 173.

CARLIER (J.). — La réception des aciers. (3 900 mots & fig.)

## In German.

### Elektrische Bahnen. (Charlottenburg.)

1927 621 .337  
Elektrische Bahnen, 15. Oktober, S. 287.

VOSSIUS (K.). — Schüttelerscheinungen an elektrischen Lokomotiven mit Schrägstangenantrieb. (3 200 Wörter & Abb.)

1927 625 .216  
Elektrische Bahnen, 15. Oktober, S. 292.

RIPP (F.) & MOHRDIECK (K.). — Brown-Boveri-Steuerstrom-Schnellkupplung für Vielfachsteuerung elektrischer Triebfahrzeuge. (1 200 Wörter & Abb.)

1927 621 .335  
Elektrische Bahnen, 15. November, S. 322.

MONATH (L.). — Wechselstrom-Triebwagen grosser Leistung für 25 Hertz. (3 300 Wörter & Abb.)

### Glaser's Annalen. (Berlin.)

1927 625 .255 (.43) & 625 .618 (.43)  
Glaser's Annalen, Heft 9, 1. November, S. 141.

ZEULMANN. — Neue Versuchsergebnisse mit elektrischer Kurzschlussbremsung im Strassenbahnbetrieb. (2 600 Wörter, 10 Tabellen & Abb.)

1927 625 .212 & 625 .251  
Glaser's Annalen, Heft 10, 15. November, S. 151.

RÜKER (E.). — Das Hartgussrad und seine Bremsung. (2 000 Wörter & Abb.)



**In English.**

**Electric Railway Journal. (New York.)**

1927 388 (.73)  
Electric Railway Journal, No. 18, October 29, p. 814.  
Two transit reports presented in New York. (6 000 words.)

1927 621 .33 (.73)  
Electric Railway Journal, No. 19, November 5, p. 852.  
Rehabilitation brings results on the South Shore Line. (3 600 words & fig.)

1927 621 .33 (.431)  
Electric Railway Journal, No. 19, November 5, p. 860.  
BLAKE (H. W.). — Berlin is electrifying its Stadt-bahn. (2 200 words & fig.)

1927 621 .31 (.73)  
Electric Railway Journal, No. 19, November 5, p. 863.  
Another automatic substation on the Pacific Electric. (900 words.)

1927 388 (.73) & 625 .4 (.73)  
Electric Railway Journal, No. 20, November 12, p. 892.  
LOCKMAN (E. L.). — Dorchester Rapid Transit extension completed. (3 200 words & fig.)

1927 385. (09.1 (.73)  
Electric Railway Journal, No. 20, November 12, p. 901.  
Good service has paid on the South Shore Line. (4 800 words & fig.)

**Engineer. (London.)**

1927 656. (01 (.42)  
Engineer, No. 3747, November 4, p. 501.  
The development of inland transport. (3 600 words.)

1927 621 .132 3 (.62) & 621 .132.5 (.62)  
Engineer, No. 3747, November 4, p. 517.  
New mixed traffic locomotives, Sudan Government Railways. (300 words & fig.)

1927 526  
Engineer, No. 3747, November 4, p. 519.  
An automatic surveying and levelling machine. (1 400 words & fig.)

1927 62. (01 & 669  
Engineer, No. 3748, November 11, p. 534.  
BRAGG (Sir William H.). — X-rays and the crystal-line structure of materials. (4 400 words.)

1927 621 .87 (.42)  
Engineer, No. 3748, November 11, p. 548.  
A constant radius luffing crane. (800 words & fig.)

1927 621 .116 (.73)  
Engineer, No. 3749, November 18, p. 556.  
The mercury boiler. (3 500 words & fig.)

1927 656 .1 (06 (.3)  
Engineer, No. 3749, November 18, p. 558.  
The Public Works and Transport Congress. (6 500 words.)

1927 621 .31 (.42)  
Engineer, No. 3749, November 18, p. 562.  
Outdoor sub-stations. (2 200 words & fig.)

1927 656 .1 (06 (.3)  
Engineer, No. 3749, November 18, p. 574.  
The Public Works, Roads and Transport Exhibition. (4 200 words & fig.)

1927 621 .9 (.42)  
Engineer, No. 3749, November 18, p. 580.  
A re-designed capstan lathe. (900 words & fig.)

**Engineering. (London.)**

1927 625 .13 (.73)  
Engineering, No. 3226, November 11, p. 601.  
SKINNER (F. W.). — The Holland vehicular tunnel under the Hudson River. (5 600 words & fig.)

1927 625 .122 (.42)  
Engineering, No. 3226, November 11, p. 608.  
175-ton oil-electric dragline excavator. (1 900 words & fig.)

1927 621 .112 & 621 .165  
Engineering, No. 3226, November 11, p. 610.  
LAW (A. H.) & CHITTENDEN (J. P.). — Higher steam pressures and their application to the steam turbine. (4 300 words, 1 table & fig.)

1927 621 .31 (.42)  
Engineering, No. 3226, November 11, p. 615.  
Cuprous-oxide rectifier for alternating current. (1 600 words & fig.)

1927 62. (01  
Engineering, No. 3226, November 11, p. 623.  
BAILEY (R. W.). — The mechanical testing of materials. (1 700 words, 2 tables & fig.)

1927 62. (01 & 669  
Engineering, No. 3226, November 11, p. 627.  
X-ray analysis of metals. (3 400 words & fig.)

1927 621 .165 & 669 .1  
Engineering, No. 3227, November 18, p. 651.  
The erosion of turbine blading. (2 000 words.)

1927 656 .1 (06 (.3)  
Engineering, No. 3227, November 18, p. 652.  
World motor transport Congress. (2 700 words.)

1927 621 .116. (06 (.42)  
Engineering, No. 3228, November 25, p. 686.  
The Institute of fuel. (3 400 words.)

1927 669 .1  
Engineering, No. 3228, November 25, p. 688.  
The manufacture and properties of alloy steels.  
(1 500 words.)

### Engineering News-Record. (New York.)

1927 691  
Engineering News-Record, No. 17, October 27, p. 674.  
HILL (C. S.). — Winter construction methods and  
plant. (4 200 words & fig.)

1927 625 .123 (.73)  
Engineering News-Record, No. 17, October 27, p. 683.  
Gutter construction in the Moffat tunnel. (100 words  
& fig.)

1927 624 .8 (.73)  
Engineering News-Record, No. 18, November 3, p. 705.  
Direct-hoist lift bridge; Rock Island Lines. (2 300  
words & fig.)

1927 625 .13 (.73)  
Engineering News-Record, No. 18, November 3, p. 709.  
CAREY (W. N.). — Sewer tunneling by day labor  
at St Paul, Minn. (2 200 words, 2 tables & fig.)

1927 62. (01 & 669  
Engineering News-Record, No. 18, November 3, p. 716.  
Steel fabricators take up structural problems and  
business co-operation. (3 400 words.)

1927 624 .1 (.73)  
Engineering News-Record, No. 19, November 10, p. 744.  
Building substructure of Arthur Kill bridges. (3 000  
words & fig.)

1927 625 .144.4 (.73)  
Engineering News-Record, No. 19, November 10, p. 752.  
Tracklaying practice on the Rock Island lines. (1 400  
words & fig.)

1927 624 .63 (.73)  
Engineering News-Record, No. 19, November 10, p. 754.  
GRYTBÄK (M. S.). — Concrete arch bridge over  
the Mississippi. (3 900 words & fig.)

1927 725 .33 (.73)  
Engineering News-Record, No. 19, November 10, p. 759.  
Steel-frame repair shop for locomotives; Chicago, In-  
dianapolis & Louisville Ry. (1 900 words & fig.)

1927 51. (08 & 721 .3  
Engineering News-Record, No. 19, November 10, p. 766.  
FELD (J.). — Spiral reinforced-concrete columns.  
(300 words & tables.)

1927 624 .1 (.73)  
Engineering News-Record, No. 20, November 17, p. 794.  
Designing a fender for a bridge pier in midchannel.  
(400 words & fig.)

### Journal of the Institute of Transport. (London.)

1927 621 .33  
Journal of the Institute of Transport, Nov., p. 9.  
SMITH (R. T.). — Main line railway electrification.  
(10 000 words, 5 tables & fig.)

1927 313 .385. (01  
Journal of the Institute of Transport, Nov., p. 32.  
GRAVESON (F. H.). — The practical value of rail-  
way statistics. (8 000 words.)

1927 656 .1 (.42) & 656 .2 (.42)  
Journal of the Institute of Transport, Nov., p. 47.  
GRIFFITHS (H. R.). — The railways and the roads.  
(5 900 words & tables.)

### Locomotive Railway Carriage & Wagon Review. (London.)

1927 385. (06.4 (.73)  
Loc. Ry. Carriage & Wagon Review, Nov. 15, p. 345.  
« The fair of the Iron Horse ». Centenary celebrations  
of a famous American railway. (2 300 words & fig.)

1927 621 .134.3 (.42)  
Loc. Ry. Carriage & Wagon Review, Nov. 15, p. 349.  
Cam-operated valve gear locomotive, L. M. & S. Ry.  
(1 200 words, 1 table & fig.)

1927 621 .132.5 (.81)  
Loc. Ry. Carriage & Wagon Review, Nov. 15, p. 352.  
4-8-2 locomotives for the Rio Grande Do Sul Railway,  
Brazil. (1 200 words & fig.)

1927 625 .216 (.43)  
Loc. Ry. Carriage & Wagon Review, Nov. 15, p. 360.  
Ring spring buffers. (1 800 words & fig.)

### Mechanical Engineering. (New York.)

1927 385. (06.4 (.73)  
Mechanical Engineering, November, p. 1169.  
Centenary exhibition of the Baltimore & Ohio Rail-  
road. « The fair of the Iron Horse ». (3 600 words &  
fig.)

1927 621 .116  
Mechanical Engineering, November, p. 1175.  
FISH (E. R.). — The characteristics of modern boi-  
lers. (2 700 words.)

1927 621 .116  
Mechanical Engineering, November, p. 1177.  
KREISINGER (H.). — Application of powdered coal  
to small boilers of industrial plants. (2 000 words,  
4 tables & fig.)

1927 621 .9 (.73) & 625 .13 (.73)  
Mechanical Engineering, November, p. 1181.  
BRUNTON (D. W.). — Mechanical equipment used in  
driving the Moffat tunnel. (3 000 words & fig.)

1927 669  
Mechanical Engineering, November, p. 1187.  
HALER (P. J.). — Quenching: a practical study on rapid cooling. (3 100 words, tables & fig.)

1927 621  
Mechanical Engineering, November, p. 1203.  
Machine parts. (11 600 words & fig.)

1927 614 .7  
Mechanical Engineering, November, p. 1213.  
LANGSDORF (A. S.). — The effect of atmospheric smoke pollution. (4 000 words.)

1927 614 .7  
Mechanical Engineering, November, p. 1216.  
ORMSBY (E.). — Organizing a smoke-abatement campaign. (3 800 words.)

1927 621 .83  
Mechanical Engineering, November, p. 1228.  
The influence of elasticity on gear-tooth loads. (2 700 words, 3 tables & fig.)

1927 621 .43  
Mechanical Engineering, November, p. 1232.  
Modern conceptions concerning ignition and combustion processes in Diesel engines. (3 200 words & fig.)

1927 621 .82 (.42)  
Mechanical Engineering, November, p. 1240.  
The Keenok variable-speed gear. (1 200 words.)

### Modern Transport. (London.)

1927 385. (08 (.66)  
Modern Transport, No. 452, November 12, p. 3.  
RHODES (G. D.). — Kenya and Uganda Railway development. (3 400 words & fig.)

1927 385. (01 (.54)  
Modern Transport, No. 452, November 12, p. 7.  
Railway problems in India. (1 500 words & fig.)

1927 625 .4 (.42)  
Modern Transport, No. 452, November 12, p. 12.  
Mails by underground. The Post Office (London) tube railway. (1 300 words & fig.)

1927 625 .4 (.42)  
Modern Transport, No. 452, November 12, p. 14.  
New Piccadilly Circus tube station. (400 words & fig.)

1927 621 .132.3 (.54)  
Modern Transport, No. 452, November 12, p. 15.  
New 4-6-2 engines for East Indian, Eastern Bengal and Great Indian Peninsula Railways. (800 words & fig.)

1927 621 .13 (01 (.42)  
Modern Transport, No. 452, November 12, p. 17.  
Locomotive building in Great Britain. (4 200 words.)

1927 621 .137 (.71 + .73) & 621 .138 (.71 + .73)  
Modern Transport, No. 452, November 12, p. 35.  
Locomotive practice in Canada and United States. (1 900 words.)

1927 621 .132.7 (.42) & 621 .132.8 (.42)  
Modern Transport, No. 452, November 12, p. 37.  
Petrol locomotive for shunting operations. (900 words & fig.)

1927 656 .1 (06 (.5)  
Modern Transport, No. 453, November 19, p. 3.  
World motor transport Congress. (5 300 words & fig.)

1927 625 .23 (.67)  
Modern Transport, No. 453, November 19, p. 5.  
New passenger stock for the Kenya and Uganda Railway. (2 200 words & fig.)

1927 656 .1 (.42) & 656 .2 (.42)  
Modern Transport, No. 453, November 19, p. 7.  
GOSSELIN (C. le M.). — Railways and general road powers. (1 900 words & fig.)

1927 656 .1 (.61)  
Modern Transport, No. 453, November 19, p. 8.  
HOY (Sir William W.). — Government-owned motor transport services. (1 600 words.)

1927 621 .132.8 (.42)  
Modern Transport, No. 453, November 19, p. 15.  
A remarkable internal combustion locomotive. (15 words & fig.)

1927 656 .1 (.439) & 656 .2 (.439)  
Modern Transport, No. 453, November 19, p. 20.  
HALTENBERGER (T. S.). — Road transport services in Hungary. (1 300 words.)

1927 621 .132.3 (.42 + .73)  
Modern Transport, No. 453, November 19, p. 23.  
« Pacific » type locomotives for the Baltimore and Ohio Railroad. (1 200 words, 2 tables & fig.)

1927 656 .1 & 656 .2  
Modern Transport, No. 453, November 19, p. 31.  
PATERSON (J.) & OSLER (J. B.). — Transport operation. (1 600 words.)

1927 656 .1 (.73) & 656 .2 (.73)  
Modern Transport, No. 453, November 19, p. 39.  
BACON (D. L.). — Road and rail in the United States. (2 400 words.)

1927 656 (.9)  
Modern Transport, No. 453, November 19, p. 44.  
Transport in Australia. (3 000 words.)

1927 652 .62 (.8)  
Modern Transport, No. 454, November 26, p. 5.  
An important South American transport system. Tramways and omnibuses of Rio de Janeiro. (2 000 words & fig.)



927 625 .61 (01 (.42)  
ern Transport, No. 454, November 26, p. 8.  
AULD (R. D.). — Light railways in the British  
s; (1 700 words.)

927 656 .257 (.42)  
ern Transport, No. 454, November 26, p. 9.  
Double-wire system of point operation. (1 900 words  
fig.)

927 621 . 132.6 (.42)  
ern Transport, No. 454, November 26, p. 24.  
Tank engines on British Railways. (1 500 words.)

927 656 .1 (.42) & 656 .2 (.42)  
ern Transport, No. 454, November 26, p. 26.  
LARSH (H.). — Local passenger transport. Question  
ownership. (1 700 words.)

927 656 .1 (.42) & 656 .2 (.42)  
ern Transport, No. 454, November 26, p. 27.  
UGHERS (J. J.). — Railways and general road  
vers. Views of a commercial traffic manager. (1 700  
ds.)

# Proceedings, American Society of Civil Engineers. (New York.)

927 625 .4 & 625 .62  
ceed. American Soc. Civil Engineers, Nov., p. 2101.  
ARSTARPHEN (F. C.). — Aerial tramways. (22 000  
ds, 41 tables & fig.)

927 621 .31 (.73)  
ceed. American Soc. Civil Engineers, Nov., p. 2245.  
EE (W. S.). — Re-designing Catawba station for  
rice on a large transmission system. (4 200 words &

927 721 .1  
ceed. American Soc. Civil Engineers, Nov., p. 2263.  
ERZAGHI (Ch.). — The science of foundations —  
present and future. (16 500 words, 1 table & fig.)

# Proceedings, Institution of Civil Engineers. (London.)

927 625 .13  
ceed., Instit. of Civil Eng., selected engineer. paper,  
No. 43, p. 3.

MATHESON (D. S.). — Subaqueous tunnelling in  
pressed air, with reference to the Barking power-  
ion cable tunnel under the River Thames. (9 000  
ds, tables & fig.)

927 624 .2  
ceed., Instit. of Civil Eng., selected engineer. paper,  
No. 44, p. 3.  
IVIAN (A. C.). — A new theory of bending. (3 000  
ds & fig.)

1927 624 .2  
Proceed., Instit. of Civil Eng., selected engineer. paper,  
No. 46, p. 3.

SALMON (E. H.). — Characteristic points. (6 500  
words & fig.)

1927 624 .2  
Proceed., Instit. of Civil Eng., selected engineer. paper,  
No. 47, p. 3.

HOWLAND (R. C. J.). — The vibrations of frames.  
(4 300 words, 5 tables & fig.)

1927 526 & 625 .111  
Proceed., Instit. of Civil Eng., selected engineer. paper,  
No. 49, p. 3.

DOUGLAS (A. H.). — A generalized method for tra-  
verse surveys in open country. (11 000 words, 6 tables  
& fig.)

1927 621 .6  
Proceed., Instit. of Civil Eng., selected engineer. paper,  
No. 51, p. 3.

MAWSON (H.). — Tests to determine the effects of  
throttling the inlet on the characteristics for a fan.  
(2 500 words, 1 table & fig.)

1927 625 .13  
Proceed., Instit. of Civil Eng., selected engineer. paper,  
No. 53, p. 3.

McLELLAN (D.). — The reconstruction of Mossgiel  
tunnel. (2 000 words & fig.)

1927 526 (.54) & 625 .111 (.54)  
Proceed., Instit. of Civil Eng., selected engineer. paper,  
No. 54, p. 3.

ROSE (G. W. N.). — Notes on railway survey. (9 300  
words & 9 tables.)

1927 624 .61 & 721 .4  
Proceed., Instit. of Civil Eng., selected engineer. paper,  
No. 56, p. 3.

WILLIAMS (Sir E. O.). — The philosophy of ma-  
sonry arches. (9 200 words, 11 tables & fig.)

1927 621 .110  
Proceed., Institut. of Civil Eng., students' meeting,  
19 January, p. 3.

BURSTALL (H. R. J.). — The testing of heat-  
engines. (5 900 words.)

# Railway Engineering & Maintenance. (Chicago.)

1927 625 .18 (.73)  
Railway Engineering and Maintenance, Nov., p. 458.

Do you know what your work is costing? (6 000  
words, 2 tables & fig.)

1927 625 .245 (.73)  
Railway Engineering and Maintenance, Nov., p. 465.

Special outfit cars for the Los Angeles & Salt Lake.  
(400 words & fig.)

1927 625 .14 (09 (.73)  
Railway Engineering and Maintenance, Nov., p. 466.

The evolution of track on American Railways. (700  
words & fig.)

1927 625 .1 & 656 .228  
Railway Engineering and Maintenance, Nov., p. 468.  
HAMMOND (E. W.). — How to make the work train profitable. (2 200 words.)

1927 625 .1 (06 (.73)  
Railway Engineering and Maintenance, Nov., p. 470.  
The Bridge and Building Convention establishes new records. (3 000 words & fig.)

1927 624. (01 (.73)  
Railway Engineering and Maintenance, Nov., p. 473.  
Materials for highway bridge floors. (1 300 words.)

1927 721 .1 (.73)  
Railway Engineering and Maintenance, Nov., p. 474.  
Excavation for foundation work. (2 400 words & fig.)

1927 691 (.73)  
Railway Engineering and Maintenance, Nov., p. 476.  
Recent developments in concrete practice. (2 700 words & fig.)

1927 656 .213 (.73)  
Railway Engineering and Maintenance, Nov., p. 478.  
Report on stockyards facilities. (2 000 words & fig.)

1927 621 .133.7 (.73)  
Railway Engineering and Maintenance, Nov., p. 480.  
Maintenance of water treating plants. (2 200 words & fig.)

1927 691 (.73)  
Railway Engineering and Maintenance, Nov., p. 482.  
Methods of waterproofing concrete structures. (1 800 words.)

1927 385 .587 (.73)  
Railway Engineering and Maintenance, Nov., p. 483.  
The more uniform distribution of work. (2 000 words & fig.)

1927 614 .8 (.73)  
Railway Engineering and Maintenance, Nov., p. 485.  
The protection of men working under traffic. (1 100 words & fig.)

1927 614 .8 (.73)  
Railway Engineering and Maintenance, Nov., p. 486.  
BALUSS (F. C.). — Progress of safety in bridge and building work. (1 300 words & fig.)

#### Railway Gazette & Railway News. (London.)

1927 621 .132.8 (.42)  
Railway Gazette & News, No. 20, Nov. 11, p. 585.  
The first Kitson-Still locomotive completed. (1 000 words.)

1927 621 .31 & 656 .25  
Railway Gazette & News, No. 20, Nov. 11, p. 586.  
Metal rectifiers for signalling. (800 words & fig.)

1927 621 .13 (09 (.68)  
Railway Gazette & News, No. 20, Nov. 11, p. 588.  
TITREN (G. E.). — Steam locomotive development in South Africa. (1 700 words & fig.)

1927 656 .256 (.42)  
Railway Gazette & News, No. 20, Nov. 11, p. 601.  
Route signalling. (1 600 words.)

1927 621 .132.3 (.42)  
Railway Gazette & News, No. 21, Nov. 18, p. 622.  
New 4-4-0 type express locomotives, London & North Eastern Railway. (600 words & fig.)

1927 656 .211.5 (.42) & 691 (.42)  
Railway Gazette & News, No. 21, Nov. 18, p. 623.  
An all-concrete railway station. (250 words & fig.)

1927 621 .9 (.42)  
Railway Gazette & News, No. 21, Nov. 18, p. 624.  
Improved machinery for railway carriage and wagon shops. (900 words & fig.)

1927 385. (09.1 (.68)  
Railway Gazette & News, 1<sup>st</sup> spec. African railw. number part I, November 21, p. 7.  
South African Railways and Harbours. (16 000 words & fig.)

1927 385. (09.1 (.68)  
Railway Gazette & News, 1<sup>st</sup> spec. African railw. number part I, November 21, p. 86.  
The island railways of Africa. (1 300 words & fig.)

1927 385. (09.1 (.67)  
Railway Gazette & News, 1<sup>st</sup> spec. African railw. number part I, November 21, p. 87.  
The Beira & Mashonaland & Rhodesia Railways. (7 000 words, tables & fig.)

1927 385. (09.1 (.67)  
Railway Gazette & News, 1<sup>st</sup> spec. African railw. number part I, November 21, p. 95.  
The Shire Highlands Railway. (750 words, 1 table & fig.)

1927 385. (09.1 (.67)  
Railway Gazette & News, 1<sup>st</sup> spec. African railw. number November 21, p. 96.  
The Central Africa Railway. (700 words & fig.)

1927 385. (09.1 (.67)  
Railway Gazette & News, 1<sup>st</sup> spec. African railw. number November 21, p. 97.  
The Trans-Zambesia Railway. (1 000 words, tables & fig.)

1927 385. (09.1 (.67)  
Railway Gazette & News, 1<sup>st</sup> spec. African railw. number November 21, p. 99.  
The Tanganyika Railways. (800 words & fig.)

1927 385. (09.1 (.67)  
Railway Gazette & News, 1<sup>st</sup> spec. African railw. number November 21, p. 100.  
The Railways of Mozambique. (600 words & fig.)

1927 385. (09.1 (.67)  
 Railway Gazette & News, 1<sup>st</sup> spec. African railw. numb.,  
 November 21, p. 101.  
 The Railways of Angola. (700 words & fig.)

1927 385. (09.2 (.6)  
 Railway Gazette & News, 1<sup>st</sup> spec. African railw. numb.,  
 November 21, p. 103.  
 African Railway Officers. (2 000 words.)

1927 621 .13 (01 (.42)  
 Railway Gazette & News, No. 22, Nov. 25, p. 650.  
 Some improvements in modern locomotives. (1 300 words.)

1927 621 .9 (.42)  
 Railway Gazette & News, No. 22, Nov. 25, p. 654.  
 Four roller high-speed planing and matching machine.  
 (1 500 words & fig.)

1927 621 .13 (01 (.71+.73)  
 Railway Gazette & News, No. 22, Nov. 25, p. 655.  
 American and Canadian locomotive practice. (700 words.)

1927 385. (06.3  
 Railway Gazette & News, No. 22, Nov. 25, p. 664.  
 Railways and scientific management. (1 100 words.)

### Railway Magazine. (London.)

1927 625 .61  
 Railway Magazine, December, p. 445.  
 BURN (G. F.). — Railways of 2 ft. 6 in. gauge as  
 « feeder » lines and for special purposes. (3 400 words  
 & fig.)

1927 656 .222.1 (.42)  
 Railway Magazine, December, p. 461.  
 ALLEN (C. J.). — British locomotive practice and  
 performance. (4 400 words, 3 tables & fig.)

### Railway Mechanical Engineer. (New York.)

1927 621 .132.5 (.73)  
 Railway Mechanical Engineer, November, p. 709.  
 Erie places 2-8-4 type locomotives in freight service.  
 (1 500 words, 1 table & fig.)

1927 621 .133.7  
 Railway Mechanical Engineer, November, p. 712.  
 TANNER (R. A.). — Cost of blowdown of boilers.  
 (1 000 words & fig.)

1927 625 .251  
 Railway Mechanical Engineer, November, p. 714.  
 VIAL (F. K.). — Proposed revision of braking power  
 for freight cars. (4 000 words, 4 tables & fig.)

1927 621 .335 (.71) & 621 .43 (.71)  
 Railway Mechanical Engineer, November, p. 719.  
 Diesel-electrics on the Canadian National. (750 words.)

1927 621 .134.2 (.73)  
 Railway Mechanical Engineer, November, p. 720.  
 Back pressure gages and limited cut-off. (1 800 words.)

1927 385 .586 (.73)  
 Railway Mechanical Engineer, November, p. 721.  
 Burlington apprentice schools. (900 words & fig.)

1927 625 .2 (06 (.73)  
 Railway Mechanical Engineer, November, p. 723.  
 Car officers' annual convention. (4 600 words.)

1927 385 .582 & 625 .235  
 Railway Mechanical Engineer, November, p. 727.  
 Safeguards for spraying finishes. (2 800 words.)

1927 621 .9  
 Railway Mechanical Engineer, November, p. 729.  
 MYRICK (H. G.). — Removing hollow piston rods  
 from cylinder pistons. (250 words & fig.)

1927 625 .26 (.73) & 725 .33 (.73)  
 Railway Mechanical Engineer, November, p. 730.  
 Delaware & Hudson centralizes its wheel repairs.  
 (1 200 words & fig.)

1927 625 .214 (.73)  
 Railway Mechanical Engineer, November, p. 733.  
 Central Railroad of New Jersey solves the hot box  
 problem. (2 100 words & fig.)

1927 385 .582 & 621 .39  
 Railway Mechanical Engineer, November, p. 738.  
 KING (W. G.). — Application of screen glass to weld-  
 ing operations. (1 400 words.)

1927 621 .95  
 Railway Mechanical Engineer, November, p. 739.  
 MALLORY (L. V.). — Boring mill jig for clamping  
 removable crown brasses. (900 words & fig.)

1927 621 .13 (02  
 Railway Mechanical Engineer, November, p. 741.  
 ICHLER (W.). — Condensed information for mecha-  
 nical inspectors. (1 700 words & fig.)

1927 62. (01 & 669 .1  
 Railway Mechanical Engineer, November, p. 745.  
 DUNN (S.). — Some facts about heat treatment.  
 (2 600 words.)

1927 621 .9  
 Railway Mechanical Engineer, November, p. 747.  
 Shop tools and devices. (800 words.)

### Railway Signaling (Chicago).

1927 656 .256.3 (.73)  
 Railway Signaling, November, p. 415.  
 MOLIS (B. W.). — Denver & Rio Grande Western  
 installs its first automatic signals. (1 900 words & fig.)



1927 385. 106.4 (.73)  
 Railway Signaling, November, p. 418.  
**Baltimore & Ohio celebrates completion of first 100 years of service.** (3 900 words & fig.)

1927 385. 586 (.73)  
 Railway Signaling, November, p. 423.  
**The Union Pacific signaling school.** (750 words & fig.)

1927 656. 257 (.73)  
 Railway Signaling, November, p. 425.  
**Union Pacific installs electric interlocking.** (2 300 words & fig.)

1927 313 : 656. 25 (.73)  
 Railway Signaling, November, p. 428.  
**Interstate Commerce Commission issues annual signal statistics.** (1 000 words, tables & fig.)

1927 656. 256  
 Railway Signaling, November, p. 432.  
**Should track circuit polarities be staggered?** (1 400 words.)

1927 656. 253  
 Railway Signaling, November, p. 434.  
**How many signal aspects and indications?** (3 200 words & 1 table.)

1927 656. 253  
 Railway Signaling, November, p. 437.  
**What type of highway crossing signal should be used in cities?** (1 000 words.)

#### In Spanish.

#### Boletín de Obras Públicas de la República Argentina. (Buenos Aires.)

1927 313. 385. (01)  
 Boletín de Obras Públicas, septiembre, p. 745.

REBUERTO (E.). — **La cuestión de la estadística ferroviaria en el último congreso internacional de ferrocarriles** (Londres, 1925). (9 800 palabras.)

1927 625. 11 (.82)  
 Boletín de Obras Públicas, septiembre, p. 774.

**Las construcciones en los ferrocarriles del Estado.** (1 700 palabras & fig.)

#### Gaceta de los Caminos de hierro. (Madrid.)

1927 621. 132.8 & 621. 43  
 Gaceta de los Caminos de hierro, n.º 3529, 1.º de nov., p. 364.

**Las ventajas de la locomotora Diesel y su buena rentabilidad.** (1 600 palabras.)

1927 621. 132.8 & 621. 43  
 Gaceta de los Caminos de hierro, n.º 3530, 10 de nov., p. 373.

**Locomotora « Kitson-Still » de vapor y combustión interna.** (1 200 palabras.)

1927 385. 1 (.73)  
 Gaceta de los Caminos de hierro, n.º 3531, 20 de nov., p. 385.

**La prosperidad de los ferrocarriles de los Estados Unidos.** (1 300 palabras.)

#### Ingeniería y Construcción. (Madrid.)

1927 621. 31 (.73)  
 Ingeniería y Construcción, diciembre, p. 595.

**Últimos adelantos norteamericanos en producción de energía eléctrica.** (6 600 palabras & fig.)

#### Revista de Obras Públicas. (Madrid.)

1927 624. 61 (.460)  
 Revista de Obras Públicas, n.º 22, 15 de nov., p. 434.

**Puente sobre el Adaja, en el ferrocarril de Avila a Salamanca.** (600 palabras & fig.)

#### In Italian.

#### L'Ingegnere. (Roma.)

1927 625. 11 (.45)  
 L'Ingegnere, novembre, p. 234.

DELL' ARDENZA (U.). — **Criteri di massima e principio direttivi per un piano regolatore delle costruzioni ferroviarie in Italia.** (4 800 parole.)

1927 625. 61 (.61 + .66)  
 L'Ingegnere, novembre, p. 240.

LUGIONI (C.) & MELLINI (E.). — **Lo sviluppo ferroviario nelle colonie italiane.** (3 900 parole, tabelle & fig.)

1927 669. 1  
 L'Ingegnere, novembre, p. 255.

FERRERI (V.). — **I fili d'acciaio ad alta resistenza.** (4 900 parole & 2 tabelle.)

#### Rivista tecnica delle ferrovie italiane. (Roma.)

1927 625. 4 (.45)  
 Rivista tecnica delle ferrovie ital., 15 ottobre, p. 137.

VALLECCCHI (U.) & CARRETTO (C.). — **Le funivie in servizio pubblico per trasporto di persone.** (12 700 parole & fig.)

1927 625. 13 (.45)  
 Rivista tecnica delle ferrovie ital., 15 ottobre, p. 172.

SAVOLDI (P.). — **Il cavalcavia di Udine.** (1 100 parole & fig.)

1927 625. 113  
 Rivista tecnica delle ferrovie ital., 15 ottobre, p. 177.

GIOVENE (N.). — **La rettifica delle curve nei tracciati ferroviari.** (2 100 parole & fig.)

**In Dutch.**

**De Ingenieur. (Den Haag.)**

1927 621 .116  
Ingenieur, n° 47, 19 November, p. 1043.

Eenige beschouwingen over den modernen ketelbouw.  
(400 woorden.)

1927 691. (01  
Ingenieur, n° 49, 3 December, p. 1076.

SPRENGER (J. J. I.). — De waterdichtheid van be-  
n, in verband met nieuwere inzichten omtrent meng-  
rhouding. (1 800 woorden & fig.)

**De Locomotief. (Amsterdam.)**

1927 625 .143.4  
Locomotief, n° 46, 16 November, p. 362.

De laschtechniek in den spoorwegbovenbouw. (2 600  
woorden & fig.)

**In Polish.**

**INŻYNIER KOLEJOWY. (Warszawa.)**

1927 621 .133.7  
Inżynier Kolejowy, 1 Listopada, str. 334.

SWIEŚCIAKOWSKI (T.). — Urządzenia do wyzys-  
nia ciepła odpadowego przy płukaniu kotłów paro-  
wowych. (2 000 słowa, 4 tablice & fig.)

1927

625 .244 (.438)

Inżynier Kolejowy, 1 Listopada, str. 338.

SOKOŁOWSKI (S.). — Transport na kolejach żelaz-  
nych artykułów spożywczych szybko psujących się i  
wagon-chłodnia syst. Inżyniera St. Sokółowskiego.  
(1 700 słowa & fig.)

**In Portuguese.**

**Gazeta dos Caminhos de ferro. (Lisboa.)**

1927 385. (09.1 (.460)

Gazeta dos Caminhos de ferro, n° 957, 1 de nov., p. 307.

DE SOUZA (J. F.). — O novo regime ferroviário  
espanhol. Resultados obtidos. (1 300 palavras.)

1927 625 .245

Gazeta dos Caminhos de ferro, n° 957, 1 de nov., p. 309.

Vagons monstros. (300 palavras & fig.)

**Revista das Estradas de ferro. (Rio de Janeiro.)**

1927 621 .132.8 & 621 .43

Revista das Estradas de ferro, n° 54, 15 de out., p. 488.

Tracção por motores Diesel nas estradas de ferro.  
(5 000 palavras & fig.)

1927 621 .33 (.81)

Revista das Estradas de ferro, n° 55, 30 de out., p. 503.

A electrificação da Central do Brasil. Projecto Aarão  
Reis. (2 500 palavras.)





# MONTHLY BIBLIOGRAPHY OF RAILWAYS <sup>(1)</sup>

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[ 016 .585 (02) ]

## I. — BOOKS.

### In French.

1927 62. (01)  
NSTETT (M. F.).

Essai et analyse des matériaux de construction et de travaux publics.

Paris, L. Eyrolles, éditeur. In-8° (16 × 25 cm.), de 4 pages avec 160 fig.

1927 621 .165. (02)  
LUZZO (Giuseppe), professeur de construction des moteurs thermiques et hydrauliques au Polytechnicum royal de Milan.

Les turbines à vapeur. (Traité à l'usage des ingénieurs, des techniciens et des élèves-ingénieurs des écoles d'application.). Traduit de l'italien par Jean Evrier, ancien élève de l'Ecole Polytechnique. Tome I : Théorie et calcul des turbines à vapeur. Tome II : Les turbines à vapeur.

Paris, Gauthier-Villars et C<sup>ie</sup>, éditeurs, 55, quai des Grands-Augustins. In-8°. Tome I, 367 pages, 260 fig. dans le texte et planches hors texte. (Prix : 60 francs.). Tome II, 596 pages, 490 fig. dans le texte et planches hors texte. (Prix : 80 francs.).

1927 721 .9 (02)  
RTHE (R. F.), ingénieur des arts et métiers, ancien expert de l'Etat.

Le calculateur du béton armé. Nouveaux abaques pour calcul rapide des sections, supprimant le calcul des moments, et pour divers taux de travail, suivis d'une étude sur l'organisation des dallages, à l'usage des ingénieurs, architectes, entrepreneurs, commis d'entreprises. Paris, Ch. Béranger, 15, rue des Saints-Pères. Chez l'auteur, Liez-Saint-Sauveur (Hautes-Pyrénées). In-8°, 100 pages avec notes.

1927 625 .25 (02)  
AMPLY (R.), mécanicien-électricien.

Nouvelle encyclopédie pratique des constructeurs, mécaniciens, électriciens, chaudronniers. Tome septième : Travaux et freins.

Paris (6<sup>e</sup>), 15, rue des Saints-Pères; Liège, 8, rue des Dominicains. Librairie polytechnique Ch. Béranger. In-8° (12 × 18 cm.), de 218 pages avec 201 fig. (Prix : 18 francs.).

1927 621. (02)  
FIAT (A.), professeur technique, chef des ateliers de l'Ecole Nationale professionnelle de Nantes.

Traçage, filetage, tracé des engrenages, calcul des vitesses des machines-outils.

Paris (6<sup>e</sup>), Desforges, Girardot & C<sup>ie</sup>, éditeurs. 5<sup>e</sup> édition. In-8° (23 × 14 cm.) de 264 pages avec 184 fig. (Prix : 27 francs.).

1927 621 .91 (02)  
GOUVERNEUR (Fernand).

Théorie moderne du fraisage. Les fraises à métaux. Leur construction et leur emploi rationnel.

Paris, Société de Publications mécaniques. In-8° (18 × 27 cm.) de x-440 pages avec 281 fig., 11 planches et tableaux.

1927 669 .1 (02)  
GUILLET (Léon), membre de l'Institut, directeur de l'Ecole centrale des Arts et Manufactures.

Trempe, recuit, revenu. I : Théorie. II : Pratique. III : Résultats.

Paris (6<sup>e</sup>), Dunod, éditeur, 92, rue Bonaparte. Tome I : Théorie (16 × 25 cm.) de xii-308 pages, 71 planches, 259 photographies et 175 fig. (Prix : 110 francs.).

1927 621 .116. (02 & 621 .165. (02)  
GUILLOT (L.), professeur de mécanique à l'Ecole nationale d'Arts et Métiers d'Angers.

Cours de mécanique. Tome 3. Chaudières à vapeur. Machines à vapeur alternatives. Turbines à vapeur.

Paris (6<sup>e</sup>), 15, rue des Saints-Pères; Liège, 8, rue des Dominicains. In-16, de 566 pages avec 344 fig. (Prix : 85 francs.).

1927 621 .33 (.73)  
JAPIOT (Marcel), ingénieur en chef, adjoint du Matériel et de la Traction des Chemins de fer P. L. M.

La traction électrique aux Etats-Unis de 1920 à 1926.

Paris (6<sup>e</sup>), Dunod, éditeur, 92, rue Bonaparte (14 × 22 cm.), 224 pages, 45 fig. et 2 planches. (Prix : 25 francs.).

<sup>(1)</sup> The numbers placed over the title of each book are those of the decimal classification proposed by the Railway Congress conjointly with the Office Bibliographique International of Brussels. (See "Bibliographical Decimal Classification as applied to Railway Science", by H. FISSENBRUCH in the number for November, 1897, of the *Bulletin of the International Railway Congress*, p. 1509).

1927 691. (02)  
**Le ciment-roi.** (Réalisations architecturales récentes, ossatures, formes, ornements.)  
 Paris, Librairie de la Construction moderne, éditeur. Un album de 60 pages (24 × 30 cm.) sur papier de luxe, avec couverture ornée d'une aquarelle de Jobbé-Duval. (Prix : 100 francs.)

1927 51. (08)  
**PONS (Louis),** ingénieur d'études des chemins de fer.  
**Tables tachéométriques** donnant aussi rapidement que la règle logarithmique tous les calculs nécessaires à l'emploi du tachéomètre.

Paris (6<sup>e</sup>), 15, rue des Saints-Pères; Liège, 8, rue des Dominicains. In-8° de 221 pages. (Prix net : 15 francs.)

1927 656 (.436)  
**SMETAMA (Jan),** docteur ès-sciences techniques, ingénieur, conseiller au Ministère des Travaux publics de Tchécoslovaquie.

**Communications.**  
 Paris, Brossard, éditeur, 140, boulevard Saint-Germain; Prague, Orbis, éditeur, 62, Fochovatriđa (18 × 25 cm.), de 365 pages avec 228 fig. et 4 planches. (Prix : 40 francs.)

### In German.

1927 721 .9  
**GEHLER (W.),** Professor der Technischen Hochschule, Dresden.

Erläuterungen mit Beispielen zu den **Eisenbeton** Bestimmungen, 1925.

Berlin, Wilhelm Ernst u. Sohn. 4, neubearbeitete Auflage (19 × 12,5 cm.), 218 Seiten mit 99 Abb. im Text. (Preis : 6 Rm.)

1927 385. (09)  
**GÜNTHER (Hans).**

**Das Buch von der Eisenbahn.**  
 Stuttgart, Franckh'sche Verlagshandlung. Mit 5 Tafeln und 278 Textbildern. (Preis : 8 Rm.)

1927 691 (.43)  
**RIEPERT, Dr. Ing.**

**Die deutsche Zement Industrie.**  
 Charlottenburg, Zementverlag. 1 099 Seiten mit 682 Abb. u. 2 Karten. (Preis : 40 Rm.)

1927 656 .212.6  
**WEICKEN (Carl).**

**Kohlenentladung aus Eisenbahnwagen.**  
 Berlin S. W. 19, Verlag von Beuth, 100 Seiten mit 34 Abb. & 11 Tafeln. (Preis : 3.50 Rm.)

### In English.

1927 656 .256.3 (.73)  
**AMERICAN RAILWAY ASSOCIATION.** Signal Section.

**American railway signaling principles and practices.** Chapter VI : Direct current relays.

New York. Published by the Association, 30, Vesey Street, 30 + 9 pages, 1 table & fig.

1926 621 .133.  
**AMERICAN THROTTLE COMPANY, Inc.**  
**American multiple throttle.** Bulletin 1.  
 New York, N. Y. Published by the Company. 8 pages & fig.

1927 621  
**BROUGHTON (H. H.).**

**Electric winders.**  
 London, Ernest Benn, Ltd. (Price : 52 sh. 6 d.)

1927 628. (0)  
**EHLERS (Victor M.), C. E., & STEEL (Ernest W. C. E.)**

**Municipal and rural sanitation.**  
 New York and London. McGraw-Hill Book Co., Inc. (6 × 9 inches), 448 pages, 119 halftones and line cuts (Price : \$4.00.)

1927 694. (0)  
**ELLIS (George).**

**Modern practical carpentry.**  
 London, W. C. 1, B. T. Batsford, Ltd., 94, High Holborn. (Price : 30 sh. net.)

1927 313 .385 (.59) & 385. (08 (.59)  
**Federated Malay States Railways.**

**Railways report for the year 1926,** by J. Strachan M. Inst. C. E., M. Inst. St. E., General Manager and Chief Engineer F. M. S. Railways.

Kuala Lumpur. Printed at the Federated Malay States Government Printing Office. 4<sup>o</sup> [13 × 8 3/4 inches (33 × 22 cm.)], 53 pages, tables, fig. and a map.

1927 656 .231. (02 (.42)  
**GORST (Elliot),** barrister-at-law.

**A guide to the Railway Rates Tribunal.**  
 London, W. C. 2. The Solicitors' Law Stationery Society Limited, 22, Chancery Lane. (8 3/4 × 6 × 1 1/2 inches). 316 pages. (Price : 12 sh. 6 d. net.)

1927 656 .1 (09)  
**HARTMANN (Cyril Hughes), M. A., B. Litt.**

**The story of the roads.**  
 London, E. C., George Routledge & Sons, Ltd., Broadway House, Carter Lane. 193 pages. (Price : 7 sh. 6 d.)

1927 614  
**Manual of accident prevention in construction.**

Washington, D. C. Associated General Contractors, 1150, Munsey Building. (9 × 11 inches), 51 pages, illustrated. (Price : \$1.00.)

1927 721. (0)  
**MARKS (Percy L.).**

**The principles of planning buildings.** An analytical treatise for the use of architects and others.

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1927 624 .6 (01)  
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RULLENS (P. J.). — Des lignes d'influence. Applica-  
tion au calcul d'un pont en arc continu à la clef et  
encastré aux naissances. (6 000 mots & fig.)

### Arts et Métiers. (Paris.)

1927 62. (01)  
Arts et Métiers, novembre, p. 429.  
MARCOTTE (E.). — Note sur la dureté des maté-  
riaux et particulièrement des métaux. (2 600 mots.)

1927 621 .133.1 (.44)  
Arts et Métiers, décembre, p. 437.  
VÉTILLARD (E.). — Application du chauffage mixte  
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GUÉNARD. — Description des machines à rectifier  
les pointes. (2 800 mots & fig.)

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SWAIN (George Fillmore), LL.D. & McKAY (Gordon),  
professor of Civil Engineering in Harvard Uni-  
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New York and London, McGraw-Hill Book Co., Inc.  
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mots & fig.)

1927 385. (06.4 (.73)  
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SAUVAGE (E.). — Exposition du centenaire du  
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1927 621 .335 (.494)  
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MULLER (A. E.). — Les locomotives de manœuvre  
type Ee 2/2, des Chemins de fer fédéraux suisses. (1 600  
mots & fig.)



1927 621 .43.  
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BUCHI (A.). — Moteurs Diesel S. L. M. avec turbo-soufflante de suralimentation. (2 000 mots & fig.)

1927 621 .87  
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Grue de quai, à volée inclinable. (350 mots, 1 tableau & fig.)

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La locomotive A. E. G. à poussier de charbon. (300 mots.)

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Les cinq grandes compagnies de chemins de fer français en 1926. (3 000 mots.)

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COYNE (A.). — Murs de soutènement et murs de quai « à échelle ». (1 400 mots & fig.)

1927 625 .62 (.73)  
Génie civil, n° 2365, 10 décembre, p. 594.  
L'enregistrement des bruits sur les réseaux de tramways américains. (1 100 mots & fig.)

1927 625 .616 (.42)  
Génie civil, n° 2365, 10 décembre, p. 595.  
Automotrices à bogies et essieux accouplés des Tramways de Bradford (Angleterre). (350 mots & fig.)

1927 625 .245  
Génie civil, n° 2366, 17 décembre, p. 623.  
Wagons basculants sur bogies à voie étroite, pour le transport des matières pondéreuses. (650 mots & fig.)

1927 621 .114  
Génie civil, n° 2366, 17 décembre, p. 625.  
Auto-graisseur sans condensation et à distributeurs multiples, pour machines à vapeur. (750 mots & fig.)

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Génie civil, n° 2367, 24 décembre, p. 633.  
DANTIN (Ch.). — Le pont Rama VI, sur la Ménam, à Bangkok (Siam). (4 200 mots & fig.)

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Les chemins de fer et les tramways, décembre, p. 230.  
SPIESS (E.). — Locomotive à vapeur type 1-4 — 4 du « Denver & Rio-Grande Western Railway ». (200 mots, 1 tableau & fig.)

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Les chemins de fer et les tramways, décembre, p. 23.  
La nouvelle locomotive allemande 2-6-2. (500 mots & fig.)

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Les voitures à impériale des Chemins de fer de l'Afrique du Sud. (600 mots & fig.)

1927 625 .236 (.44)  
Les chemins de fer et les tramways, décembre, p. 23.  
CROZET (A.). — Les chantiers de désinfection de wagons dans les différents réseaux de chemins de fer. (2 000 mots & fig.)

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1927 621 .33  
L'Ind. voies ferrées et transp. autom., novembre, p. 451.  
SEKUTOWICZ. — Les récents progrès de la technique des sous-stations de traction. (10 000 mots & fig.)

1927 621 .338 (.65)  
L'Ind. voies ferrées et transp. autom., novembre, p. 47.  
KERGALL (B.). — Améliorations techniques apportées sur le réseau électrique de la Société des chemins de fer sur routes d'Algérie pour faire face aux difficultés d'exploitation d'après guerre. (5 300 mots, tableau & fig.)

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HOULET. — Réparation par soudure autogène des foyers en cuivre de la Compagnie des chemins de fer de l'Est. (5 000 mots & fig.)

1927 625 .232 (.44)  
Revue générale des chemins de fer, décembre, p. 565.  
VALLANCIEN (J.). — Voitures métalliques à bogies et à intercircularité de 1<sup>re</sup> classe à 8 compartiments, de 2<sup>e</sup> classe à 9 compartiments et de 3<sup>e</sup> classe à 10 compartiments étudiées par l'Office central d'études du matériel de chemins de fer. (1 500 mots & fig.)

1927 385 .113 (.44)  
Revue générale des chemins de fer, décembre, p. 571.  
Les résultats d'exploitation du réseau des Chemins  
de fer de l'Etat en 1926. (5 000 mots & 2 tableaux.)

1927 385 .113 (.44)  
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Résultats d'exploitation des Chemins de fer d'Alsace  
et de Lorraine en 1926. (3 300 mots.)

1927 621 .132.8 (.44)  
Revue générale des chemins de fer, décembre, p. 594.  
Résultats obtenus sur les Chemins de fer d'intérêt  
local avec les automotrices à essence. (3 500 mots &  
fig.)

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Croisement monorail. (1 200 mots & fig.)

1927 621 .135.2 (.43)  
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L'emploi de boîtes à garnitures avec bagues en fonte  
aux Chemins de fer du Reich. (2 400 mots & fig.)

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Revue générale des chemins de fer, janvier, p. 3.  
RENEVEY. — Voitures semi-métalliques de 2<sup>e</sup> classe  
pour grandes lignes du réseau d'Alsace et de Lorraine.  
2 700 mots & fig.)

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PEZEU (J.). — Nouvelle organisation du travail  
dans les ateliers de dépôts de la Compagnie d'Orléans.  
5 400 mots & fig.)

1928 656 .211.5 (.44)  
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MONET (J.). — Note sur les garages installés à  
Antin par la Compagnie des chemins de fer de l'Est  
pour l'entretien de ses voitures (garages de l'Oureq).  
600 mots & fig.)

1928 313 .385 (.44)  
Revue générale des chemins de fer, janvier, p. 35.  
Résultats obtenus en 1926 sur le réseau des Chemins  
de fer de l'Etat en France d'après les comptes d'admi-  
nistration publiés pour ladite année. (600 mots &  
tableaux.)

1928 621 .87 (.44)  
Revue générale des chemins de fer, janvier, p. 53.  
Grues électriques à électro-aimant porteur. (900 mots  
& fig.)

1928 621 .131.3 (.43) & 621 .43 (.43)  
Revue générale des chemins de fer, janvier, p. 59.  
Essais de la locomotive Diesel, à transmission méca-  
nique, du Professeur Lomonossov. (1 900 mots & fig.)

## Revue politique et parlementaire. (Paris.)

1927 385 .57  
Revue politique et parlementaire, 10 décembre, p. 339.  
TRUCHY (H.). — L'élite et la fonction publique.  
(3 900 mots.)

1927 385. (09.3 (.43 + .44)  
Revue politique et parlementaire, 10 décembre, p. 349.  
PESCHAUD (M.). — Les chemins de fer français et  
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1928 385 .588 (.44)  
Revue politique et parlementaire, 10 janvier, p. 82.  
VILLEY (E.). — Le syndicat professionnel et la  
fonction publique. (10 300 mots.)

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appliqués à l'industrie. (Liège.)

1927 669 .1  
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SAVAGE (H.). — Nouvelles méthodes de cémentation.  
(8 900 mots & fig.)

1928 608. (01)  
Revue universelle des mines, n° 1, 1<sup>er</sup> janvier, p. 24.  
VANDER HAEGHEN (G.). — Brevets d'invention et  
droits intellectuels divers. (4 800 mots.)

## In German.

### Elektrische Bahnen. (Charlottenburg.)

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Elektrische Bahnen, Heft 12, 15. Dezember, S. 333.  
HAFOK (F.). — Die elektrische Zugförderung auf den  
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### Glasers Annalen. (Berlin.)

1927 656 .222.1 & 656 .222.5  
Glasers Annalen, Heft 11, 1. Dezember, S. 163.  
NORDMANN (H.). — Lokomotivbelastung und Fahr-  
planbildung. (10 000 Wörter, 1 Tabelle & Abb.)

1927 625 .246 (.43)  
Glasers Annalen, Heft 11, 1. Dezember, S. 175.  
BIECK. — Berechnung des Rahmenträgersystems in  
den Seitenwänden der neuen eisernen Wagen der Ber-  
liner Hochbahn. (800 Wörter & Abb.)

1927 625 .143.5 (.43) & 621 .9 (.43)  
Glasers Annalen, Heft 11, 1. Dezember, S. 178.  
HELLMANN (L.). — Wiederherstellung von Schie-  
nenklemmplatten. (1 700 Wörter & Abb.)

1927 621 .131.1 (01)  
Glasers Annalen, Heft 12, 15. Dezember, p. 188.  
BARSKE (U.). — Bestimmung der Schlepplasten von  
Dampflokomotiven. (3 400 Wörter & Abb.)

1927 625 .255  
Glaser's Annalen, Heft 12, 15. Dezember, p. 196.  
BALSLEV (J. V.). — Eine Oeldruckbremse für Straßenbahnen. (1700 Wörter & Abb.)

In English.

Bulletin, American Railway Engineering Association. (Chicago.)

1927 347 .75 (.73)  
Bull. Amer. Ry. Eng. Ass<sup>n</sup>, October, p. 91.  
Report of Committee XX. — Uniform general contract forms. (11 000 words.)

1927 621 .133.7 (.73)  
Bull. Amer. Ry. Eng. Ass<sup>n</sup>, October, p. 123.  
Report of Committee XIII. — Water Service. (17 500 words, tables & fig.)

1927 721 .3  
Bull. Amer. Ry. Eng. Ass<sup>n</sup>, October, p. 197.  
HUNLEY (J. B.). — A simplified column formula of the Secant type. (2 500 words & fig.)

Electric Railway Journal. (New York.)

1927 725 .33 (.73)  
Electric Railway Journal, No. 21, November 19, p. 937.  
McLANAHAN (A.). — Locomotive maintenance shop of the Virginian Railway. (2 800 words & fig.)

1927 388 (.73)  
Electric Railway Journal, No. 22, November 26, p. 977.  
Operating contract plan for Philadelphia's Broad Street subway. (3 700 words & fig.)

1927 621 .338 (.431)  
Electric Railway Journal, No. 22, November 26, p. 981.  
BLAKE (H. W.). — Cars on Berlin Stadtbahn. (2 300 words & fig.)

1927 388 (.944)  
Electric Railway Journal, No. 22, November 26, p. 985.  
Rapid transit railways now serve Sydney, Australia. (1 400 words & fig.)

1927 385 .517.1 (.73)  
Electric Railway Journal, No. 23, December 3, p. 1026.  
McDONALD (E. C.). — Electric railway pension plans. (1 900 words.)

1927 625 .142  
Electric Railway Journal, No. 23, December 3, p. 1028.  
GEORGE (H. H.). — A substitute for wood ties? (900 words.)

1927 621 .338 (.73)  
Electric Railway Journal, No. 24, December 10, p. 1055.  
De Luxe trend shown in the new Brill car. (2 700 words, 3 tables & fig.)

1927 385 .15 (.73)  
Electric Railway Journal, No. 24, December 10, p. 1055.  
San Francisco purchase urged. (3 200 words.)

1927 656 .234 (.4)  
Electric Railway Journal, No. 24, December 10, p. 1063.  
BLAKE (H. W.). — Fares and fare collection in Europe. (3 500 words & fig.)

1927 621 .7 (.73)  
Electric Railway Journal, No. 25, December 17, p. 1093.  
Special devices improve maintenance in Chicago shops (2 000 words & fig.)

1927 621 .336 (.73)  
Electric Railway Journal, No. 25, December 17, p. 1100.  
BIRCH (L. W.). — Catenary with unusual pole spacing withstands cyclone. (1 200 words & fig.)

1927 621 .338 (.73)  
Electric Railway Journal, No. 25, December 17, p. 1107.  
BLACKHALL (J. R.). — Light weight features Jolie car. (2 800 words & fig.)

1927 621 .33 (.73)  
Electric Railway Journal, No. 26, December 24, p. 1140.  
BIGELOW (H.). — Saving a small system. (2 600 words & fig.)

1927 621 .31 (.73)  
Electric Railway Journal, No. 26, December 24, p. 1145.  
Largest mercury-arc rectifier installation made at Bridgeport. (1 000 words & fig.)

1927 621 .338 (.73)  
Electric Railway Journal, No. 26, December 24, p. 1148.  
Aluminium car tested in St-Louis. (800 words, 1 table & fig.)

1927 625 .62 (.4)  
Electric Railway Journal, No. 26, December 24, p. 1155.  
BLAKE (H. W.). — Answering questions before they are asked. (2 000 words & fig.)

1927 656 .254 (.73)  
Electric Railway Journal, No. 26, December 24, p. 1156.  
Automatic crossing gate developed by North Shore Line. (600 words & fig.)

1927 621 .338 (.73)  
Electric Railway Journal, No. 27, December 31, p. 1187.  
Atlanta builds for the future with new cars and service. (2 000 words, tables & fig.)

1927 625 .62 (.44)  
Electric Railway Journal, No. 27, December 31, p. 1188.  
BLAKE (H. W.). — Paris revises street railway and bus franchise. (2 700 words, 6 tables & fig.)

1927 621 .33 (.73)  
Electric Railway Journal, No. 27, December 31, p. 119.  
VANDERSLUIS (W. M.). — Illinois Central has steadily improved its suburban service. (1 500 words & fig.)



## Engineer. (London.)

1927 621 .116. (06 (.42)  
Engineer, No. 3750, November 25, p. 594.  
The Institute of Fuel. (1 500 words.)

1927 621. (06 (.43)  
Engineer, No. 3750, November 25, p. 603.  
Engineering materials conference and exhibition at  
Berlin. (2 800 words & fig.)

1927 621. (06 (.42)  
Engineer, No. 3750, November 25, p. 604.  
Institution of Mechanical Engineers. A modern Port-  
land cement plant. (1 900 words.)

1927 621 .110 (.42) & 621 .116 (.42)  
Engineer, No. 3750, November 25, p. 605.  
ANDERSON (J.). — Operating experiences with  
300 lb. steam pressure. (4 600 words, tables & fig.)

1927 62  
The Metallurgist, p. 161, Sup. Eng., No. 3750, Nov. 25.  
The basis of design. (1 400 words.)

1927 669  
The Metallurgist, p. 162, Sup. Eng., No. 3750, Nov. 25.  
Impurities. (1 200 words.)

1927 669  
The Metallurgist, p. 163, Sup. Eng., No. 3750, Nov. 25.  
« Hardeners » for aluminium alloys. (900 words,  
table & fig.)

1927 669 .1  
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The surface decarburisation of steel. (1 200 words.)

1927 62. (01 & 669.1  
The Metallurgist, p. 165, Sup. Eng., No. 3750, Nov. 25.  
Impact properties of steel after cold compression.  
700 words, 2 tables & fig.)

1927 669  
The Metallurgist, p. 169, Sup. Eng., No. 3750, Nov. 25.  
Pressure die castings. (2 300 words & fig.)

1927 669 .1  
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Copper steels. (700 words & 2 tables.)

1927 62. (01 & 691  
The Metallurgist, p. 172, Sup. Eng., No. 3750, Nov. 25.  
Properties of materials at high temperatures. (1 500  
words.)

1927 621 .3 (.42) & 725 .4 (.42)  
Engineer, No. 3751, December 2, p. 618.  
The Shannon power scheme. (3 700 words & fig.)

1927 621 .132.8 (.54)  
Engineer, No. 3751, December 2, p. 625.  
Petrol rail cars for India. (500 words & fig.)

1927 62. (01 & 669 .1  
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Testing the hardness of gear wheel teeth. (500 words  
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CUNNINGHAM (B.). — The western ports of the  
North Atlantic. (2 500 words & fig.)

1927 621 .132.3 (.42)  
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4-4-0 type locomotive on the London and North  
Eastern Ry. (500 words & fig.)

1927 62. (06 (.431)  
Engineering, No. 3229, December 2, p. 734.  
The Berlin exhibition and conference on engineering  
materials. (2 400 words.)

1927 656 .212.6 (.42)  
Engineering, No. 3230, December 9, p. 741.  
The Nuvako pneumatic conveying system. (2 300  
words & fig.)

1927 389 (.42)  
Engineering, No. 3230, December 9, p. 747.  
The Pratt and Whitney supermicrometer. (1 300 words  
& fig.)

1927 669 .1  
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HERBERT (E. G.). — Cutting temperatures. (5 900  
words & fig.)

## Engineering News-Record. (New York.)

1927 624 .63 (.73)  
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HAYDEN (A. G.). — Rigid-frame solid-section design  
applied to skew bridges. (1 200 words, 2 tables & fig.)

1927 625 .143.4 (.73)  
Engineering News-Record, No. 22, December 1, p. 885.  
Rail joint forms hinge in wave motion. (650 words  
& fig.)

1927 691 (.73)  
Engineering News-Record, No. 23, December 8, p. 912.  
LEVENS (A. S.). — Tests show shrinkage effect of  
calcium chloride in concrete. (800 words & fig.)

1927 624. (01 & 691 (.73)  
Engineering News-Record, No. 23, December 8, p. 914.  
Winter construction of road bridges in Michigan.  
(1 400 words, 1 table & fig.)

1927 624 .2  
Engineering News-Record, No. 23, December 8, p. 920.  
BULL (A.). — Brass wire models used to solve inde-  
terminate structures. (1 700 words & fig.)

1927 624 .1 (.73)  
Engineering News-Record, No. 23, December 8, p. 927.  
MAKPER (G. W.). — Foundation problems in enlarging center pier of swing bridge at Providence. (2 900 words & fig.)

1927 625 .13 (.73)  
Engineering News-Record, No. 24, December 15, p. 948.  
Tunneling methods in plastic clay at Detroit. (4 000 words & fig.)

1927 625 .13 (.73)  
Engineering News-Record, No. 24, December 15, p. 956.  
McELROY (G. E.) & BETTS (C. A.). — Ventilation experiments in the Moffat tunnel. (2 700 words & fig.)

1927 625 .13 (.73)  
Engineering News-Record, No. 25, December 22, p. 988.  
Tunneling at Musconetcong now and fifty years ago. (2 700 words & fig.)

1927 625 .1 (.725)  
Engineering News-Record, No. 25, December 22, p. 1009.  
Southern Pacific Railway of Mexico is completed. (2 600 words & fig.)

1927 621 .392 (.73)  
Engineering News-Record, No. 26, December 29, p. 1041.  
FISH (G. D.). — Arc welding used on one story building two acres in area. (1 400 words & fig.)

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1927 656 .222.1 (.42)  
Great Western Railway Magazine, December, p. 471.  
The Baltimore and Ohio Railroad Company's report on the performance of « King George V ». (250 words, tables & fig.)

1927 621 .132.3 (.42)  
Great Western Railway Magazine, December, p. 477.  
With « King George V » in America. (1 000 words & fig.)

1927 656 .284 (.42)  
Great Western Railway Magazine, December, p. 487.  
The recent gale and floods. (900 words & fig.)

1927 625 .245 (.42)  
Great Western Railway Magazine, December, p. 491.  
The conveyance of milk in bulk. (600 words & fig.)

#### Journal of the Institute of Transport. (London.)

1927 656 .231  
Journal of the Institute of Transport, December, p. 84.  
SMITH (J. G.). — Transport rate-making in theory. (3 800 words.)

1927 656 .1 & 656 .2  
Journal of the Institute of Transport, December, p. 89.  
EAGLESOME (Sir John). — Road and rail transport. A comparison. (7 200 words.)

1927 656 .225 & 656 .23  
Journal of the Institute of Transport, December, p. 91.  
WAGGETT (H. G.). — The problem of the small consignment. (2 700 words.)

#### Locomotive Railway Carriage & Wagon Review. (London.)

1927 621 .132.3 (.54)  
Loc. Ry. Carriage & Wagon Review, Dec. 15, p. 375.  
Pacific type express locomotive, Indian State Ry. (1 200 words & fig.)

1927 621 .132.3 (.42)  
Loc. Ry. Carriage & Wagon Review, Dec. 15, p. 378.  
Three-cylinder 4-4-0 passenger engine, London & North Eastern Railway. (900 words & fig.)

1927 621 .87 (.42)  
Loc. Ry. Carriage & Wagon Review, Dec. 15, p. 380.  
Southern Ry. 36-ton steam breakdown cranes. (1 200 words & fig.)

1927 621 .132.  
Loc. Ry. Carriage & Wagon Review, Dec. 15, p. 393.  
Recent « Garratt » locomotives. (700 words & fig.)

1927 621 .134.  
Loc. Ry. Carriage & Wagon Review, Dec. 15, p. 395.  
BREWER (F. W.). — The economic advantages of high steam pressures in locomotives. (3 000 words.)

#### London & North Eastern Railway Magazine. (London.)

1927 693 (.42)  
L. & N. E. Railway Magazine, December, p. 527.  
RUDGARD (W. D.). — The waterproofing of Merryhill and Podgill viaducts. (750 words & fig.)

1927 725 .33 (.42)  
L. & N. E. Railway Magazine, December, p. 531.  
WHITE (G. F.). — Gorton running shed. (1 600 words & fig.)

#### Modern Transport. (London.)

1927 385 .113 (.68)  
Modern Transport, No. 455, December 3, p. 3.  
South African Railways. Sir William Hoy's annual report. Reply to critics of electrification. (2 600 words.)

1927 385 .1 (.73)  
Modern Transport, No. 456, December 10, p. 2.  
Railway position in the United States. (750 words.)

1927 656 .1 (.68) & 656 .2 (.68)  
Modern Transport, No. 456, December 10, p. 8.  
South African Railways. — Effects of motor competition. (1 700 words.)

1927 385 .3 (.42)  
Modern Transport, No. 456, December 10, p. 12.  
Transport bills in Parliament. Proposals of the Rail-  
way Companies. (1 300 words & fig.)

1927 656 .212.5  
Modern Transport, No. 457, December 17, p. 2.  
New methods for British yards. (800 words.)

1927 385  
Modern Transport, No. 457, December 17, p. 3.  
STAMP (Sir Josiah). — Railway and industrial amal-  
amations. (3 700 words.)

1927 656 .25 (.01)  
Modern Transport, No. 457, December 17, p. 7.  
Automatic and power signalling. (1 600 words.)

1927 656 .211.5 (.42)  
Modern Transport, No. 457, December 17, p. 9.  
Marshalling yard operation. (900 words.)

1927 625 .234  
Modern Transport, No. 457, December 17, p. 14.  
HILL (L.). — Overcrowding in public conveyances.  
(900 words.)

Proceedings, American Society of Civil Engineers.  
(New York.)

1927 625 .13 (.73)  
Proceed. Amer. Soc. Civil Eng., December, p. 2675.  
HORWEGE (A. A.). — Methods used in the con-  
struction of twelve pre-cast concrete segments for the  
ameda County, California, estuary subway. (4 300  
words & fig.)

Proceedings, Institution of Mechanical Engineers.  
(London.)

1927 621. (06 (.42)  
Proceed., Institut. of Mechan. Engineers, No. 3, p. 723.  
FOWLER (Sir H.). — First ordinary general meeting  
of the session held on 21st October 1927. — Address  
of the President. (12 000 words.)

1927 62. (01  
Proceed., Institut. of Mechan. Engineers, No. 3, p. 751.  
BRAGG (Sir W. H.). — The application of x-rays  
to the study of the crystalline structure of materials.  
(1 000 words & fig.)

Railway Engineer. (London.)

1927 656 .253 (.42)  
Railway Engineer, December, p. 443.  
Route signalling at Newport (Mon.) station, Great  
Western Railway. (2 800 words & fig.)

1927 621 .9 (.42)  
Railway Engineer, December, p. 449.  
New machines for railway shops. (1 000 words & fig.)

1927 621 .132.8 (.42)  
Railway Engineer, December, p. 450.  
Kitson-Still engine completed. (600 words & fig.)

1927 625 .244 (.59)  
Railway Engineer, December, p. 451.  
New perishable and refrigerator cars, Palestine Rail-  
ways. (500 words & fig.)

1927 625 .172 (.73)  
Railway Engineer, December, p. 456.  
Special trains for weed killing. (500 words & fig.)

1927 621 .132.8 (.54)  
Railway Engineer, December, p. 459.  
New metre-gauge Garratt locomotive, Burma Rail-  
ways. (900 words & fig.)

1927 656 .253  
Railway Engineer, December, p. 460.  
Route signalling. (1 200 words.)

1927 656 .256.3 (.42)  
Railway Engineer, December, p. 461.  
New colour-light signalling, Southern Railway.  
(600 words & fig.)

1927 624 .7 (.942)  
Railway Engineer, December, p. 462.  
New Murray River bridge, South Australian Rail-  
ways. (600 words & fig.)

Railway Engineering & Maintenance. (Chicago.)

1927 656 .284 (.73)  
Railway Engineering & Maintenance, December, p. 508.  
Floods cause havoc and large losses to New England  
roads. (4 000 words & fig.)

1927 625 .143.3 (.42)  
Railway Engineering & Maintenance, December, p. 512.  
JOHNSTONE-TAYLOR. — A British device for  
recording rail sections. (700 words & fig.)

1927 625 .154 (.73)  
Railway Engineering & Maintenance, December, p. 513.  
LANG (P. G. Jr.). — Supporting a turntable circle  
wall on concrete cylinders. (1 200 words & fig.)

1927 621 .133.7 (.71)  
Railway Engineering & Maintenance, December, p. 516.  
PORTER (J. W.). — Developing water supplies in a  
region of bad water. (4 000 words & fig.)

1927 624. (09 (.73)  
Railway Engineering & Maintenance, December, p. 520.  
Baltimore & Ohio depicts progress in bridge design.  
Development illustrated by models at centenary exhi-  
bition. (Fig.)



1927 621 .392 (.73) & 625 .143.4 (.73)  
 Railway Engineering & Maintenance, December, p. 522.  
 Building up battered rail joints by electric arc welding. (1 200 words & fig.)

1927 625 .151 (.73) & 625 .173 (.73)  
 Railway Engineering & Maintenance, December, p. 524.  
 HILLMAN (A. B.). — Renewing turnouts in one of America's great terminal yards. (2 000 words & fig.)

1927 621 .139, 625 .18 & 625 .27  
 Railway Engineering & Maintenance, December, p. 527.  
 HALL (U. K.). — How material stocks may be controlled. (4 000 words & fig.)

### Railway Gazette & Railway News. (London.)

1927 621 .132.8 (.42)  
 Railway Gazette & News, No. 23, December 2, p. 689.

New Sentinel-Cammell steel rail-cars for the London Midland & Scottish Railway. (400 words & fig.)

1927 656 .211 (.82) & 725 .31 (.82)  
 Railway Gazette & News, No. 23, December 2, p. 691.

New station at Campana, Central Argentine Railway. (2 800 words & fig.)

1927 656 .1 & 656 .2  
 Railway Gazette & News, No. 23, December 2, p. 695.

Road and rail transport. International views on the necessity of co-operation. (3 300 words.)

1927 385. (09.1 (.6)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 4.  
 The Railways of Africa. (1 000 words, 2 tables & fig.)

1927 385. (09.1 (.62)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 7.  
 The Egyptian State Railways. (4 300 words, 1 table & fig.)

1927 385. (01 (.6)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 11.  
 The proposed Trans-Saharan Railway. (1 500 words & fig.)

1927 385. (09.1 (.62)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 13.  
 The Egyptian Delta Light Railways. (1 000 words & fig.)

1927 385. (09.1 (.62)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 15.  
 The Sudan Government Railways and Steamers. (7 600 words, 3 tables & fig.)

1927 385. (09.1 (.67)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 23.  
 The Kenya & Uganda Railway. (5 700 words & fig.)

1927 385. (09.1 (.6)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 3.  
 Typical views of African Railways. (Fig.)

1927 385. (09.1 (.6)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 8.  
 The Nigerian Railway. (6 900 words, tables & fig.)

1927 385. (09.1 (.6)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 9.  
 The Gold Coast Railway. (3 700 words, 2 tables & fig.)

1927 385. (09.1 (.6)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 9.  
 The Sierra Leone Railway. (1 900 words, 1 table & fig.)

1927 385. (01 (.6)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 9.  
 The Cape to Cairo Railway. (1 800 words & fig.)

1927 385. (09.1 (.61)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 10.  
 The Railways of French Northern Africa. (1 800 words & fig.)

1927 385. (09.1 (.63)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 10.  
 The Franco-Ethiopian Railway. (400 words & fig.)

1927 385. (09.1 (.66)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 10.  
 The Railways of French West Africa. (1 000 words & fig.)

1927 385. (09.1 (.67)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 10.  
 The Railways of French Equatorial Africa. (400 words & fig.)

1927 385. (09.1 (.675)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 107.  
 The Railways of the Belgian Congo. (1 700 words & fig.)

1927 385. (09.1 (.61)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 110.  
 Italian Railways in Africa. (250 words & fig.)

1927 385. (02 (.6)  
 Railw. Gaz. & News, 2nd spec. Afr. railw. n., Dec. 5, p. 111.  
 « The Railway Gazette » directory of African Railways. (Table.)

1927 625 .222.1  
 Railway Gazette & News, No. 24, December 9, p. 721.  
 The Great Western Railway locomotive « King George V » in America. (1 000 words & fig.)

1927 625 .142.4 (.42)  
 Railway Gazette & News, No. 24, December 9, p. 722.  
 Reinforced concrete sleepers on the London and North Eastern Ry. (500 words & fig.)

- 1927 625 .245 (.42)  
Railway Gazette & News, No. 24, December 9, p. 723.  
Conveyance of milk in glass-lined tank wagons. (1 800 words & fig.)
- 1927 656 .254 (.73)  
Railway Gazette & News, No. 25, December 16, p. 753.  
SCHWENDT (B. J.). — A new train despatching system, New York Central Lines. (6 500 words & fig.)
- 1927 385  
Railway Gazette & News, No. 25, December 16, p. 763.  
Sir Josiah Stamp on industrial and railway amalgamations. (2 000 words.)
- 1927 656 .1 (.42) & 656 .2 (.42)  
Railway Gazette & News, No. 25, December 16, p. 769.  
Rail and road co-operation on the London & North Eastern Railway. (600 words.)
- 1927 621 .132.3 (.54)  
Railway Gazette & News, No. 26, December 23, p. 785.  
New Pacific type locomotives for India. (600 words & fig.)
- 1927 659 (.42)  
Railway Gazette & News, No. 26, December 23, p. 786.  
Railway salesmanship and public relations work. (1 000 words.)
- 1927 625 .232 (.44)  
Railway Gazette & News, No. 26, December 23, p. 788.  
New steel coaches, Northern Railway of France. (1 200 words & fig.)
- 1927 621 .131.3 (.42) & 656 .222.1 (.42)  
Railway Gazette & News, No. 26, December 23, p. 792.  
Some experimental results from a three-cylinder compound locomotive. (1 600 words & table.)
- 1927 656 .212.9 (.42)  
Railway Gazette & News, No. 26, December 23, p. 794.  
Railhead freight distribution on the London Midland Scottish Ry. (900 words & fig.)
- 1927 625 .4 (.42)  
Railway Gazette & News, No. 26, December 23, p. 798.  
Reconstruction of Piccadilly Circus station. (650 words & fig.)
- 1927 656 .254 (.42)  
Railway Gazette & News, No. 26, December 23, p. 799.  
Experimental loud-speaker telephone installation at Liverpool Street, London & North Eastern Ry. (200 words & fig.)
- 1927 385 .113 (.68)  
Railway Gazette & News, No. 27, December 30, p. 810.  
South African Railways and Harbours. (1 000 words.)
- 1927 625 .245 (.42) & 656 .261 (.42)  
Railway Gazette & News, No. 27, December 30, p. 817.  
Road-rail traffic on the London Midland & Scottish Ry. (1 400 words.)
- 1927 621 .335 (.54) & 621 .338 (.54)  
Railway Gazette & News, No. 27, December 30, p. 819.  
Electric steel coaches for the Bombay, Baroda & Central India Ry. (1 500 words & fig.)
- 1928 656 .222.1 (.54)  
Railway Gazette & News, No. 1, January 6, p. 8.  
New P. & O. Punjab express. (800 words, 1 table & fig.)
- 1928 621 .31 (.44)  
Railway Gazette & News, No. 1, January 6, p. 10.  
Paris-Orleans Railway electrification. (250 words & fig.)
- 1928 621 .132.8 (.81)  
Railway Gazette & News, No. 1, January 6, p. 11.  
Garratt locomotives for São Paulo (Brazilian) Railway. (500 words & fig.)
- 1928 625 .174 (.485)  
Railway Gazette & News, No. 1, January 6, p. 12.  
Electric snow plough, Swedish State Railways. (1 200 words & fig.)
- 1928 621 .132.1 (.42)  
Railway Gazette & News, No. 1, January 6, p. 13.  
Total weights and maximum axle loads of the largest locomotives in Great Britain. (300 words & 1 table.)
- 1928 621 .7  
Railway Gazette & News, No. 1, January 6, p. 15.  
Details of a large pattern shop. (1 200 words.)
- 1928 385. (09.1) (.91)  
Railway Gazette & News, No. 1, January 6, p. 16.  
Railroading in the Philippines. (1 200 words & fig.)
- Railway Magazine. (London.)
- 1928 621 .132.3 (.42)  
Railway Magazine, January, p. 15.  
Three-cylinder 4-4-0 express locomotives, London & North Eastern Railway. (650 words & fig.)
- 1928 656 .222.1 (.42)  
Railway Magazine, January, p. 17.  
ALLEN (C. J.). — British locomotive practice and performance. (4 400 words, 4 tables & fig.)
- Railway Mechanical Engineer. (New York.)
- 1927 621 .132.8 (.73)  
Railway Mechanical Engineer, December, p. 768.  
Rail car driven by steam. (3 300 words & fig.)
- 1927 385 .57 & 385 .58  
Railway Mechanical Engineer, December, p. 772.  
Determining the fitness of employees. (4 000 words.)
- 1927 621 .131.2 (.73)  
Railway Mechanical Engineer, December, p. 775.  
BRUCE (A. W.). — The locomotive Yardstick. (5 200 words & fig.)

1927 621 .132.5 (.73)  
 Railway Mechanical Engineer, December, p. 781.  
 2-8-4 type freight locomotives. (1 000 words, 1 table & fig.)

1927 625 .2 (01 (.73)  
 Railway Mechanical Engineer, December, p. 783.  
 BARROWS (D. S.). — An analysis of truck side frame design. (3 000 words & fig.)

1927 625 .26 (.73)  
 Railway Mechanical Engineer, December, p. 789.  
 Modern car repair tracks. (1 700 words & fig.)

1927 621 .138.1 (.73) & 725 .33 (.73)  
 Railway Mechanical Engineer, December, p. 799.  
 Chesapeake & Ohio engine terminal at Russell, Kentucky. (3 200 words, 2 tables & fig.)

1927 621 .134.3 (.73)  
 Railway Mechanical Engineer, December, p. 808.  
 MALLORY (L. V.). — Superheater unit testing device. (1 300 words & fig.)

#### Railway Signaling (Chicago).

1927 656 .256.3 (.73)  
 Railway Signaling, December, p. 451.  
 Color-light automatic block signals installed on the New York Central. (2 400 words & fig.)

1927 624 .8 (.73) & 656 .258 (.73)  
 Railway Signaling, December, p. 457.  
 Santa Fe installs low-voltage plant on new Mississippi bridge. (2 400 words & fig.)

1927 656 .254 (.73)  
 Railway Signaling, December, p. 462.  
 HENDRIE (R. A.). — Telephone annunciators on Missouri-Kansas-Texas aid train dispatcher. (700 words & fig.)

1927 656 .25 (.73)  
 Railway Signaling, December, p. 463.  
 Buffalo, Rochester & Pittsburgh has high standard of signal maintenance. (2 800 words & fig.)

1927 625 .151 (.73) & 656 .25 (.73)  
 Railway Signaling, December, p. 469.  
 WERTHMULLER (L. S.). — Missouri Pacific uses spring switches. (1 000 words & fig.)

1927 656 .259 (.73)  
 Railway Signaling, December, p. 471.  
 Half-interlocker on Detroit, Toledo & Ironton. (500 words & fig.)

#### South African Railways and Harbours Magazine. (Johannesburg.)

1927 385 .51 (.68)  
 South African Rys. & Harbours Mag., Nov., p. 1850.  
 The South African Railways and Harbours Conciliation Board. (4 500 words & fig.)

1927 625 .245 (.68)  
 South African Rys. & Harbours Mag., Nov., p. 1873.  
 Double-deck wagon designed for the conveyance of motor cars. (500 words & fig.)

1927 385 .113 (.68)  
 South African Rys. & Harbours Mag., Nov., p. 1879.  
 The Railways of Rhodesia. (2 500 words & fig.)

1927 656 .256.3 (.68)  
 South African Rys. & Harbours Mag., Nov., p. 1890.  
 STARKEY (S.). — Automatic colour light signalling Capetown to Wynberg. (2 700 words & fig.)

#### University of Illinois Bulletin. (Urbana.)

1927 621 .116  
 University of Illinois Bulletin, No. 5, October 4, p. 7.  
 CROFT (H. O.). — Heat transmission through boiler tubes. (10 000 words, 5 tables & fig.)

1927 697  
 University of Illinois Bulletin, No. 8, October 25, p. 5.  
 FAHNESTOCK (M. K.). — Effect of enclosures on direct steam radiator performance. (6 800 words & fig.)

#### In Spanish.

#### Boletín de Obras Públicas de la República Argentina. (Buenos Aires.)

1927 624 .32 (.82)  
 Boletín de Obras Públicas, noviembre, p. 943.  
 Puente sobre el Río Pichileufú. (450 palabras & fig.)

#### Gaceta de los Caminos de hierro. (Madrid.)

1927 385. (06.111)  
 Gac. de los Caminos de hierro, n° 3533, 10 de dic., p. 409.  
 Reunión de la Comisión permanente de la Asociación internacional del Congreso de ferrocarriles. (900 palabras.)  
 1927 621 .132.8 (.44)  
 Gac. de los Caminos de hierro, n° 3534, 20 de dic., p. 421.  
 Desenvolvimiento de las automotrices de esencia. (2 500 palabras.)

#### In Italian.

#### Rivista delle Comunicazioni ferroviarie. (Roma.)

1927 385 .14 (.45)  
 Rivista delle Comunicazioni ferrov., n° 23, 1 dic., p. 19.  
 CUOMO (G.). — Rivalutazione e tariffe. (1 900 parole.)



1927 385 .113 (.45)  
vista delle Comunicazioni ferrov., n° 24, 15 dic., p. 17.  
**Le Ferrovie dello Stato nell' esercizio 1926-27.** (3 900 parole.)

1928 656 .233 (.42+.44)  
vista delle Comunicazioni ferrov., n° 1, 1° gen., p. 17.  
**Episodi di concorrenza fra Compagnie ferroviarie.** (800 parole & fig.)

1928 656 .211.5 (.45)  
vista delle Comunicazioni ferrov., n° 1, 1° gen., p. 25.  
**La grandiosa tettoia della nuova stazione Centrale di Milano.** (500 parole & fig.)

**Rivista tecnica delle ferrovie italiane. (Roma.)**

1927 621 .331 (.45)  
vista tecnica delle ferrov. ital., 15 novembre, p. 193.  
**MAZZONI (A.). — Sistemazione degli impianti di trazione elettrica sulle linee Valtellinesi.** (2 800 parole & fig.)

1927 656 .211.5 (.45)  
vista tecnica delle ferrov. ital., 15 dicembre, p. 241.  
**FAVA (A.). — La grande tettoia-viaggiatori della nuova stazione di Milano.** (2 400 parole, 1 tabella & fig.)

1927 621 .132.6 (.45)  
vista tecnica delle ferrov. ital., 15 dicembre, p. 249.  
**MARTA (F.). — Locomotive-tenders del gruppo (D) delle Ferrovie Complementari della Sardegna.** (6 000 parole & fig.)

1927 313 .385  
vista tecnica delle ferrov. ital., 15 dicembre, p. 277.  
**GIOVENE (N.). — La terza tappa della Statistica internazionale delle ferrovie.** (1 600 parole.)

**Rivista dei Trasporti. (Milano.)**

1927 621 .33 (.45)  
vista dei Trasporti, ottobre, p. 195.  
**POLLONE (M.). — L'elettrificazione della Ferrovia romana. Napoli-Pozzuoli-Torregaveta.** (4 300 parole & fig.)

1927 625 .5  
vista dei Trasporti, ottobre, p. 200.  
**PALANZA (V.). — Le funivie per trasporto di persone.** (11 000 parole.)

**In Dutch.**

**De Ingenieur. (Den Haag.)**

1927 62. (01)  
Ingenieur, n° 52, 24 December, p. 1128.  
**BIEZENO (C. B.). — Over de quasi-statistische berekening van gesloten cirkelvormige ringen met constante doorsnede.** (1 000 woorden & fig.)

**De Locomotief. (Amsterdam.)**

1927 621 .9 & 625 .212  
De Locomotief, n° 52, 28 December, p. 410.  
**Een roteerend apparaat voor het verhitten van wielbanden.** (2 000 woorden.)

**In Polish.**

**INŻYNIER KOLEJOWY. (Warszawa.)**

1927 625 .112  
Inżynier Kolejowy, 1 Grudnia, str. 365.  
**KRZYŻANOWSKI (W.). — Urządzenia i instalacje przestawcze dla tranzytu bezprzeladunkowych wagonów w komunikacji między kolejami normalno- i szeroko-torowymi.** (3 600 słowa & rys.)

1927 625 .251  
Inżynier Kolejowy, 1 Grudnia, str. 372.  
**SUCHANEK (H.). — Hamulec przestawny systemu « Suchanek ».** (2 300 słowa & rys.)

**In Portuguese.**

**Gazeta dos Caminhos de ferro. (Lisboa.)**

1927 624 .62 (.09 (.469)  
Gazeta dos Caminhos de ferro, n° 958, 16 de nov., p. 323.  
**DE SOUZA (J. F.). — A historia da ponte D. Maria Pia.** (1 700 palavras.)

1927 385. (09.3 (.469)  
Gazeta dos Caminhos de ferro, n° 958, 16 de nov., p. 343.  
**dos SANTOS (R. E.). — Relembrando un passado distante.** (4 300 palavras & fig.)

1927 625 .23 (01 (.469)  
Gazeta dos Caminhos de ferro, n° 959, 1 de dez., p. 351.  
**DE SOUZA (J. F.). — O numero de classes nas caruagens de passageiros.** (1 100 palavras.)

**Revista das Estradas de ferro. (Rio de Janeiro.)**

1927 624 .63 (.81)  
Revista das Estradas de ferro, n° 57, 30 de nov., p. 574.  
**Ponte de concreto armado sobre o Rio Piau, na estrada de Coronel Pacheco a Rio Branco.** (350 palavras & fig.)

1927 656 .237 (.81)  
Revista das Estradas de ferro, n° 58, 15 de dez., p. 593.  
**A uniformização da contabilidade ferroviaria no Brasil.** (2 400 palavras.)

1927 313 .385 (.81)  
Revista das Estradas de ferro, n° 58, 15 de dez., p. 596.  
**Nossa rêde ferroviaria. (Quadro.)**



# MONTHLY BIBLIOGRAPHY OF RAILWAYS <sup>(1)</sup>

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## I. — BOOKS.

### In French.

1927 388. (02 & 625 .6 (02)  
LETTRE, inspecteur général des ponts et chaussées,  
inspecteur général des Travaux de Paris.  
Chemin de fer urbains.  
Paris (6°), J.-B. Baillière et fils, éditeurs, 19, rue  
Mouton-Rouille. In-8° (16 × 23 cm.) de 588 pages avec  
148 fig. (Prix : 90 francs.)

1928 621 .83 (02)  
CAVALIERI (G. L.), ancien directeur technique de la  
Société S. A. F. I. M., à Florence.  
Tracé, calcul, correction, procédés modernes de la taille  
des engrenages.

Paris (6°), 15, rue des Saints-Pères; Liège, 1, quai  
de la Grande-Bretagne. Librairie polytechnique Ch. Béran-  
ger. In-8° (16 × 25 cm.), de 293 pages, avec 157 fig.  
et 45 tableaux. (Prix : 58 francs.)

1928 669. (02)  
HAMPLY (R.), mécanicien-électricien.  
Nouvelle encyclopédie pratique des constructeurs,  
mécaniciens, électriciens, chaudronniers. Tome huitième:  
Traitements thermiques et essais des métaux.

Paris (6°), 15, rue des Saints-Pères; Liège, 1, quai de  
la Grande-Bretagne. Librairie polytechnique Ch. Béran-  
ger. In-8° (12 × 18 cm.), de 242 pages avec 158 fig.  
Prix net : 18 francs.)

1927 33 (02)  
COLSON (C.), inspecteur général des ponts et chaus-  
sées, vice-président du Conseil d'Etat de France,  
membre de l'Académie des sciences morales et poli-  
tiques.

Cours d'économie politique professé à l'Ecole poly-  
technique et à l'Ecole nationale des ponts et chaussées.  
Livres IV : Les entreprises, le commerce et la circulation.  
Édition définitive, revue et considérablement augmentée.  
Paris. Gauthier-Villars et C<sup>ie</sup>, impr.-libr. de l'Ecole  
polytechnique, 55, quai des Grands-Augustins; Félix  
Leclan, éditeur, 108, boulevard Saint-Germain. In-8°.  
108 pages.

1927 621. (02)  
FRANCHE (Georges), ingénieur-mécanicien A. et M.,  
E. C. P.

Manuel de l'ouvrier mécanicien. Tome XVI : Formu-  
laire de l'ouvrier mécanicien, calculs d'atelier. Tome  
XVII : Calibres et interchangeabilité.

Paris (6°), Gauthier-Villars et C<sup>ie</sup>, imprimeurs-édi-  
teurs, 55, quai des Grands-Augustins. In-12. Tome XVI,  
196 pages avec fig. (Prix : 15 francs.). Tome XVII,  
152 pages avec 116 fig. et un formulaire de l'ouvrier  
mécanicien et calculs d'atelier. (Prix : 15 francs.)

1927 621 .9  
GORGEU, capitaine d'artillerie.

Machines-outils. Eléments. Dispositifs. Organisation.

Paris (6°), Gauthier-Villars & C<sup>ie</sup>, imprimeurs-édi-  
teurs, 55, quai des Grands-Augustins. In-8° (16 ×  
25 cm.), de viii-362 pages avec 263 fig. (Prix :  
40 francs.)

1928 621 .332  
KYSER (Herbert), ingénieur.

Transport de l'énergie électrique. Tome premier : Les  
moteurs. — Les convertisseurs et les transformateurs,  
leur fonctionnement, leurs couplages, leurs applications  
et leur construction. Traduit sur la deuxième édition  
allemande par R. Weiller, ancien élève de l'Ecole poly-  
technique de Zurich.

Paris (6°), 15, rue des Saints-Pères; Liège, 1, quai de  
la Grande-Bretagne. Librairie polytechnique Ch. Béran-  
ger. In-8° (16 × 25 cm.), de 430 pages, avec 305 fig.,  
6 planches et 1 tableau hors texte. (Prix : 90 francs.)

1927 625 .1 (.44)  
MOUTIER (A.).

Aperçu d'ensemble sur le travail de reconstitution du  
système ferroviaire dans les régions du Nord de la  
France, envahies et dévastées pendant la guerre, en  
notant au passage les méthodes auxquelles la Compagnie  
du Chemin de fer du Nord a eu recours, aussi bien  
pour la réfection de son outillage anéanti que pour  
assurer le bien-être de ses agents à qui on demandait  
un effort particulièrement important et soutenu dans  
des régions où on manquait de tout.

La Haye. Kon. Instituut van Ingenieurs. In-8° (24  
× 15.5 cm.), de 64 pages avec 51 fig. et 2 planches.

(1) The numbers placed over the title of each book are those of the decimal classification proposed by the Railway Congress conjointly  
with the Office Bibliographique International of Brussels. (See « Bibliographical Decimal Classification as applied to Railway Science », by  
W. S. W. in the number for November, 1897, of the *Bulletin of the International Railway Congress*, p. 1509).



1927 621 .9 (02)  
**ROURE (C.)**, ingénieur des Arts et Manufactures.  
**Machines-outils pour le travail du bois.**  
 Paris (6°), Gaston Doin et C<sup>ie</sup>, éditeurs, 8, place de l'Odéon. In-16 de 350 pages avec 152 fig. (Prix : 25 francs.)

1928 62. (01)  
**TAKABEYA (F.)**, professeur aux Universités impériales de Hokkaido, Sapporo (Japon).  
**Etude des pièces encastrées aux deux extrémités par considération spéciale de la force longitudinale.**  
 Paris et Liège, Librairie polytechnique Ch. Béranger, éditeur. In-8°, 95 pages avec 48 fig. (Prix : 28 francs.)

1928 621 .3  
**VIGNERON (H.)**.  
**L'électricité et ses applications.**  
 Paris, Masson et C<sup>ie</sup>. In-8° (16.5 × 23.5 cm.) de 812 pages avec 780 fig.

1928 531. (02)  
**WILMOTTE (Maurice)**, ingénieur.  
**Cours de mécanique à l'usage des Ecoles industrielles et professionnelles.**  
 Paris (6°), 15, rue des Saints-Pères; Liège, 1, quai de la Grande-Bretagne. Librairie polytechnique Ch. Béranger. 2<sup>e</sup> édition. In-8° (13 × 20 cm.), de 402 pages avec 244 fig. (Prix : 45 francs.)

**In German.**

1927 51. (08)  
**DEUTSCH (Walter)**.  
**Tafeln über die Mechanische Prüfung der Metalle.**  
 Berlin. V. D. I. Buchhandlung. (Preis : 2 Rm.)

1928 385. (02 .43)  
**Deutscher Reichsbahn-Kalender 1928.** Herausgegeben von Dr. Hans Baumann, Berlin.  
 Leipzig, Konkordia-Verlag. (Preis : 4 Rm.)

1927 669 .1 (02)  
**DWORZAK (H.)**, Prof. Ing. & **KORZINSKY (H.)**, Prof. Ing.

**Lehr- und Hilfsbuch der Eisen- und Stahlgiesserei, nebst einem kurzen Abriss über die Giesserei der Nicht-eisenmetalle (Metallgiesserei).**

Wien und Leipzig, Verlag der Hölder-Pichler-Tempsky A. G. 8°, xv + 373 Seiten, mit 38 Tabellen & 192 Textabb. (Preis geb. : 10 Rm.)

1928 621. (02)  
**Freytags Hilfsbuch für den Maschinenbau.**  
 Leipzig, Verlag von Johann Ambrosius Barth. 8°. xvi, 1490 Seiten mit 2484 Abb. (Preis in Leinen geb. : 17.40 Rm.)

1927 656. 212.4 (02)  
**GOLD (H.)**.  
**Katechismus für den Rangierdienst.** Anleitg. f. Prüfg. in d. Laufbahn d. Rangierbeamten, m. e. Anleitg. f. d. Prüfg. f. d. Verzahnungsstellen d. Rangiermeister.  
 Leipzig, Verlag von Julius Ambrosius Barth. 83 Seiten. (Preis : 1.75 Rm.)

1928 625  
**RANDZIO (E.)**.  
**Stollenbau.**  
 Berlin, W. 66. Verlag von Wilhelm Ernst u. So 295 Seiten mit 290 Abb. (Preis : 22 Rm.)

1927 621. (02)  
**RÖTSCHER (F.)**.  
**Die Maschinenelemente. I. Band.**  
 Berlin, W. 9. Verlag von Julius Springer. 600 Seiten mit 1042 Abb. und 1 Tafel. (Preis : 41 Rm.)

1927 624. (02)  
**SCHAECHTERLE (K.)**.  
**Die allgemeinen Grundlagen des Brückenbaues.**  
 Leipzig, Verlag von Julius Ambrosius Barth. Kl. 144 Seiten mit 59 Abb. (Preis : 1.50 Rm.)

1927 621  
**SCHLESINGER (G.)**.  
**Die Arbeitsgenauigkeit der Werkzeugmaschinen.**  
 Leipzig, Verlag von Johann Ambrosius Barth. 40 Seiten mit 31 Abb.-Gruppen. (Preis : 6 Rm.)

1927 385 .54  
**SCHÖNING (Hans)**.  
**Verkehr und Trinksitte.**  
 Berlin, W. 8. Neuland-Verlag, G. m. b. H.

**In English.**

1927 016 .385 (.7)  
**Albert Fink, 1827-1897. A bibliographical memoir of the father of railway economics and statistics in the United States.** Prepared in connection with the 100<sup>th</sup> Anniversary of Mr. Fink's birth, October 27, 1927.  
 Washington, D. C. Published by Library, Bureau of Railway Economics. 21 pages.

1927 62. (02)  
**AMERICAN SOCIETY FOR TESTING MATERIALS.**  
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1927 621 .116 (.4)  
**Britain's fuel problems.**  
 London, S. W. 1. The Fuel Economist. 530, Abchurch House, Victoria Street. (Price : £2-2 sh. net.)

1927 669 .1 (02)  
**JULLENS (D. K.).**  
 Steel and its heat treatment. Third edition.  
 New York, John Wiley & Sons, Inc.; London, Chapman & Hall, Limited. (Price : 25 sh. net.)

1927 313  
**BURGESS (Robert Wilbur).**  
 Introduction to the mathematics of statistics.  
 Boston, Houghton Mifflin Co. (6 × 8 inches), 14 pages, diagrams & tables. (Price : \$2.50.)

1927 385 .5  
**ANA (Richard T.).**  
 Human machine in industry.  
 New York, Codex Book Co. (6 × 8 inches), 312 pages & tables. (Price : \$4.00.)

1927 385 .1 (.73) & 385 .3 (.73)  
**Depreciation : Testimony and cross-examination of Henry Earle Riggs ... in the matter of the valuation of the property of the New York Central Lines, Washington, D. C., August 25, 26, 1927.**  
 Philadelphia, Pa. Published by Secretary, Presidents' Conference Committee. 123 pages and charts.

1927 621 .1 (09)  
**WICKENSON (H. W.) & JENKINS (Rhys).**  
 James Watt and the steam engine. The memorial volume prepared for the Committee of the Watt centenary commemoration at Birmingham, 1919.  
 Oxford, The Clarendon Press. (Price : 63 sh. net.)

1927 656 .2 (.73)  
**RANKENFIELD (H. C.), Dr.**  
 The weather bureau as a factor in the operation of railroads and lines of communication.  
 New York City, Published by Telegraph and Telephone Section, American Railway Association. 12 pages.

1927 355  
**DIAGOOD (Johnson), General.**  
 The services of supply. A well told account of the services behind the lines in the European War in which railroaders may like the sections on transportation.  
 New York and Boston, Published by Houghton, Mifflin. 403 pages. (Price : \$5.00.)

1927 659 (.73)  
**HARRISON (John).**  
 Posters and publicity, fine printing and design.  
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1927 385. (09.3 (.3)  
**HOLLAND (Rupert Sargent).**  
 Historic railroads.  
 Philadelphia, Macrae Smith Co. (7 × 9 inches), 43 pages, illust. (Price : \$4.00.)

1927 621 .133.1 (06)  
**INTERNATIONAL RAILWAY FUEL ASSOCIATION.**  
 Proceedings of the nineteenth annual convention, 1927.  
 Chicago, Ill., Published by the Association. 476 pages, illust. (Price : \$3.00.)

1928 621 .13 (02)  
**Locomotive Engineers' Pocket Book, 1928.**  
 London, The Locomotive Publishing Co. Ltd. 300 pages & tables. (Price : 3 sh. 6 d. net.)

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**Mechanical world year book, 1928.**  
 Manchester, Emmott & Co. Ltd., 65, King Street; London, W. C. 2, 20, Bedford Street. (4 × 6 1/4 inches), 348 pages with diary. (Price : 1 sh. 6 d.)

1927 385 .54  
**Medical Research Council. Industrial fatigue research Board. Report No. 44. The physique of women in industry. A contribution towards the determination of the optimum load.**  
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1928 621. (02)  
**NASMITH (F.).**  
 Calvert's mechanics' Almanach.  
 London, E. C. 4, John Heywood, Ltd., 20, St. Bride Street. (Price : 6 d. net.)

1927 691. (02)  
**NATIONAL RESEARCH COUNCIL.**  
 International critical tables of numerical data, physics, chemistry and technology.  
 New York, McGraw-Hill Book Co. (9 × 11 inches), 616 pages, diagrams, tables. (Sold only on subscription for set of 5 volumes : \$60.00, payable at rate of \$12.00 per vol., as issued.)

1927 313 .385 (.54)  
**North Western Railway (India) statistical manual, 1927.**  
 Lahore (India). Mr. A. T. Stowell, Agent, North Western State Railway. 212 pages.

1927 621 .3 (02)  
**Practical engineer, electrical pocket book and diary, 1928.**  
 London, E. C. 1. The Oxford University Press, Falcon square. (Price : 2 sh. 6 d. net.)

1927 656 .237. (06 (.73)  
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 Forty-third report of the Association. Denver meeting, June 8, 9, 10, 1927.  
 Washington, D. C. Published by the Association. (Price : \$2.00.)

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**SLEIGH (A. I.), F. C. H., M. I. C. E., M. I. E. (Ind.).**  
 Note on steps to be taken to permit of running the  
 « future large vehicle » on broad gauge railways.  
 Calcutta, Government of India Central Publication  
 Branch. Technical paper No. 262. 28 pages, tables  
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1927 621 .32 (02)  
**SYLVESTER (Cyril) & RITCHIE (Thomas E.).**  
 Modern electrical illumination.  
 New York, Longmans, Green & Co. (7 × 10 inches),  
 416 pages, illust., tables. (Price : \$15.00.)

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**WILSON (William).**  
 Electric control gear and industrial electrification.  
 London, Humphrey Milford. (Price : 25 sh. net.)

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### In French.

#### Arts et Métiers. (Paris.)

1928 385 .587  
 Arts et Métiers, janvier, p. 1.  
**MONGON (J.). — Le travail par équipe.** (5 200 mots  
 & fig.)

#### Bulletin des transports internationaux par chemins de fer. (Berne.)

1928 385 .15 (.460)  
 Bull. des transp. intern. par ch. de fer, janvier, p. 22.  
 Les chemins de fer en Espagne. (1 200 mots.)

1928 313 .385 (.438)  
 Bull. des transp. intern. par ch. de fer, janvier, p. 30.  
 Résultats de l'exploitation des Chemins de fer de  
 l'Etat polonais en 1926. (Tableau.)

1928 385 .62 (.4)  
 Annexe au Bull. des tr. intern. par ch. de fer, janv., p. 1.  
 Convention internationale concernant le transport des  
 voyageurs et des bagages par chemins de fer (C. I. V.)  
 signée à Berne le 23 octobre 1924. (11 200 mots.)

#### Bulletin technique de la Suisse romande. (Vevey).

1928 691  
 Bull. techn. de la Suisse romande, n° 1, 14 janv., p. 1.  
**BOLOMEY (J.). — Progrès réalisés dans la fabrica-  
 tion des chaux et ciments et leur influence sur l'exécu-  
 tion des maçonneries.** (2 800 mots.)

### In Spanish.

1927 621 .1  
 Todos los tipos de locomotoras.  
 Madrid, Publicaciones de la revista « Los Cami-  
 de Hierro », Lope de Rueda, 3. (Precio : 2 pesetas.)

### In Italian.

1927 691. (1)  
**RIZZI (Giuseppe), chimico industriale.**  
 Manuale del capomastro. I materiali idraulici ceme-  
 tizi, loro impiego e prove.  
 Milano, Ulrico Hoepli, editore. Quinta edizione rifat-  
 ta ed ampliata. 1 vol. (10 × 15 cm.) di pag. xiv + 414  
 con 34 incisioni e 50 tavole intercalate nel testo  
 (Prezzo : Lire 18.)

1928 621 .3  
 Bull. techn. de la Suisse romande, n° 1, 14 janv., p.  
**Soudure à l'arc électrique par courant polyphasé**  
 (2 900 mots & fig.)

#### Chronique des transports. (Paris.)

1928 385 .2 (.44), 656 .1 (.44) & 656 .2 (.4)  
 Chronique des transports, n° 1, 10 janvier, p. 2.  
 La concurrence de l'automobile et de la voie d'eau  
 (4 500 mots.)

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 La situation financière des réseaux et la question des  
 salaires du personnel. (3 800 mots.)

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 Chronique des transports, n° 3, 10 février, p. 2.  
 Le relèvement des traitements et l'assainissement  
 financier des réseaux. (2 100 mots.)

1928 385 .517.1 (.4)  
 Chronique des transports, n° 3, 10 février, p. 8.  
 Les retraites des agents de chemins de fer. (4 200  
 mots.)

1928 385. (01) (.67)  
 Chronique des transports, n° 3, 10 février, p. 39.  
 Le développement des voies ferrées au Congo belge  
 (600 mots.)

#### Génie civil. (Paris.)

1927 62. (1)  
 Génie civil, n° 2368, 31 décembre, p. 670.  
**BOUTARIC (A.). — Les propriétés de la matière  
 sous les hautes pressions.** (1 600 mots.)



- 1927 625 .143.2  
Génie civil, n° 2368, 31 décembre, p. 671.  
PICHARD (L.). — La fabrication de rails sains par le procédé de laminage Courthéoux. (1 600 mots, 1 tableau & fig.)
- 1927 625 .255  
Génie civil, n° 2368, 31 décembre, p. 674.  
La récupération du courant électrique au freinage des trains alimentés en courant continu. (1 900 mots.)
- 1928 621 .392  
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BIDAULT DES CHAUMES (A.). — La soudure électrique par résistance (procédé Thomson). (4 400 mots & fig.)
- 1928 621 .335 (.61) & 621 .43 (.61)  
Génie civil, n° 2369, 7 janvier, p. 17.  
Nouvelle locomotive Diesel-électrique en service en Tunisie. (900 mots & fig.)
- 1928 625 .62 (.44)  
Génie civil, n° 2370, 14 janvier, p. 29.  
DELANGHE (G.). — Les méthodes appliquées à la T. C. R. P. pour l'entretien des autobus et des tramways. (4 500 mots.)
- 1928 625 .4 (01)  
Génie civil, n° 2370, 14 janvier, p. 49.  
HIRSCHAUER (L.) & TALON (A.). — La formule ferroviaire des transports extra-légers et ultra-rapides à grand rendement. (1 000 mots.)
- 1928 625 .143.3  
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DANTIN (Ch.). — Les fissures transversales superficielles des rails. (2 300 mots & fig.)
- 1928 621 .116  
Génie civil, n° 2371, 21 janvier, p. 63.  
Les réchauffeurs d'air pour foyers de chaudières. (3 900 mots & fig.)
- 1928 691. (01)  
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DESLANDRES (P.). — Recherches sur la perméabilité des bétons « calcaires-silicate de soude ». (2 000 mots, 2 tableaux & fig.)
- 1928 625 .24 (01)  
Génie civil, n° 2372, 28 janvier, p. 87.  
NICOLAS (M.). — Le choix d'un type de wagons à marchandises pour les chemins de fer coloniaux. (1 800 mots & fig.)
- 1928 669 .1  
Génie civil, n° 2372, 28 janvier, p. 90.  
L'essai de corrosion des aciers. (2 500 mots & fig.)
- 1928 62. (01 & 721 .9)  
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CHAUDY (F.). — Calcul des hourdis des tabliers d'ouvrages d'art en béton armé. (1 900 mots & fig.)

- 1928 621 .335 (.494)  
Génie civil, n° 2374, 11 février, p. 129.  
Nouvelles locomotives électriques à marchandises type 1 C + C 1, des Chemins de fer fédéraux suisses. (2 400 mots & fig.)
- 1928 62. (01)  
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PICHARD (L.). — Ségrégation négative, ou inverse, et tache blanche. (2 700 mots & fig.)
- 1928 624. (01 (.44) & 721 .9 (01 (.44)  
Génie civil, n° 2374, 11 février, p. 134.  
Nouveau règlement du Ministère des travaux publics, du 10 mai 1927, sur les ponts métalliques. Modifications à la circulaire du 20 octobre 1906 relative à l'emploi du béton armé. (3 800 mots & fig.)
- 1928 624 .32 (.73)  
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Pont-route à double tablier du Havre-de-Grâce (Etats-Unis). (750 mots & fig.)
- La Science et la Vie. (Paris.)
- 1928 651  
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- Les chemins de fer et les tramways. (Paris.)
- 1928 621 .132.5 (.73)  
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- 1928 625 .143.4  
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Système d'éclissage de rails pour voies ferrées. (350 mots & fig.)
- 1928 621 .132.8  
Les ch. de fer et les tramw., janvier, p. 6.  
SUTRA (P.). — Automotrices à accumulateurs. (1 600 mots & fig.)
- 1928 656 .256  
Les ch. de fer et les tramw., janvier, p. 14.  
Système de signalisation par circuit de voie assurant la protection d'un train dans le cas de non fonctionnement d'un appareil. (1 000 mots & fig.)
- 1928 656 .254  
Les ch. de fer et les tramw., janvier, p. 15.  
Avertisseur portatif pour voie de chemins de fer en exploitation. (650 mots & fig.)
- 1928 625 .142.2 (.44)  
Les ch. de fer et les tramw., janvier, p. 16.  
L'utilisation des bois coloniaux pour les traverses de chemins de fer. (3 400 mots.)

# L'Industrie des voies ferrées et des transports automobiles. (Paris.)

1927 625 .143.3 (.44)  
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1927 621 .335  
L'Ind. voies ferrées et transp. autom., décembre, p. 534.

JEANCARD (L.). — Communication sur les automotrices électriques à accumulateurs. (7 600 mots, 1 tableau & fig.)

1927 621 .132.8 (.44)  
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VERGNIOLE. — Les automotrices à essence sur les réseaux français d'intérêt local. Etude technique et économique. (10 200 mots, 4 tableaux & fig.)

1927 625 .258  
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DAVID. — Freins électromagnétiques à patins sur les rails. (6 000 mots & fig.)

## Revue universelle des mines, de la métallurgie, des travaux publics, des sciences et des arts appliqués à l'industrie. (Liège.)

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MULLER (A. E.). — Reibungsverhältnisse bei Gross-Elektrolokomotiven. (1 800 Wörter, 3 Tafeln & Abb.)

1928 621 .33 (.494)  
Elektrotechnische Zeitschrift, Heft 1, 5. Januar, S. 23.  
Gegenwärtiger Stand und nächste Ausdehnung des elektrischen Betriebes der Schweizerischen Bundesbahnen. (400 Wörter.)

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ROSENBERG (E.). — Gleichstromdynamo für Lichtbogenschweissung. (3 700 Wörter & Abb.)

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1928 621 .3 (06 (.45)  
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ROSENTHAL (H.). — Kennzahlen zum Entwurf im Vergleich von Typenreihen elektrischer Maschine. (3 400 Wörter & Abb.)

### In English.

#### Electric Railway Journal. (New York.)

1928 388 (.73) & 621 .33 (.73)  
Electric Railway Journal, No. 1, January 7, p. 4.

Surface rapid transit line operated in Detroit. (270 words & fig.)

1928 621 .336 (.4 + .73)  
Electric Railway Journal, No. 1, January, p. 8.

HEALY (K. T.). — Light construction feature European overhead. (1 200 words, 1 table & fig.)

1928 621 .3  
Electric Railway Journal, No. 1, January, p. 11.

ANTONIONO (C.). — Rectifier superior to converter on North Shore Line. (2 300 words, 3 tables & fig.)

1928 659 (.73)  
Electric Railway Journal, No. 1, January, p. 15.

Birmingham believes in advertising its service. (150 words & fig.)

1928 621 .338 (.73)  
Electric Railway Journal, No. 1, January, p. 17.

CLARDY (W. J.). — Articulated cars meet unusual requirements. (1 800 words, 1 table & fig.)

#### Engineer. (London.)

1927 621 .9 & 669 .9  
Engineer, No. 3752, December 9, p. 650.

HERBERT (E. G.). — Cutting tools research committee. The effect of cutting temperature on tools and on materials subjected to work. (3 400 words & fig.)

1927 621 .9 (.42)  
Engineer, No. 3752, December 9, p. 663.

Two improved wood-working machines. (2 400 words & fig.)

1927 621 .95 (.42)  
Engineer, No. 3753, December 16, p. 694.

A portable petrol engine driven drill. (850 words & fig.)

1927 621 .131.3 (.42) & 656 .222.1 (.42)  
 Engineer, No. 3754, December 23, p. 706.  
 Some experimental results from a **three-cylinder compound locomotive**. (2 900 words, tables & fig.)

1927 621 .31 (.83)  
 Engineer, No. 3754, December 23, p. 716.  
 13 330 kva. vertical water-wheel **alternator**. (3 500 words & fig.)

1927 621 .131.3 (.73)  
 Engineer, No. 3754, December 23, p. 718.  
 FRY (L. H.). — Some experimental results from a **three-cylinder compound locomotive**. (2 200 words & fig.)

1927 624 .62 (.42)  
 Engineer, No. 3755, December 30, p. 728.  
 New road bridge between Newcastle and Gateshead. (2 200 words & fig.)

1927 621 .94 (.42)  
 Engineer, No. 3755, December 30, p. 737.  
 A **pneumatically-controlled centrally driven wheel** the. (1 500 words & fig.)

1927 656 .253 (.51)  
 Engineer, No. 3755, December 30, p. 745.  
 A new method of operating **semaphore signals**. (1 700 words & fig.)

1927 62. (01)  
 Engineer, No. 3755, December 30, p. 748.  
 RIDDLESWORTH (W. H.). — **Factors of safety and quality of material**. (1 200 words & 2 tables.)

1927 669  
 The Metallurgist, page 180, Supplement to the Engineer, No. 3755, December 30.  
 The behaviour of metals at high temperatures. (1 500 words.)

1927 62. (01 & 625 .212  
 The Metallurgist, p. 181, Supplement to the Engineer, No. 3755, December 30.  
 Fatigue cracks in axles. (1 600 words.)

1927 625 .143.2  
 The Metallurgist, p. 183, Supplement to the Engineer, No. 3755, December 30.  
 Means for improving steel rails. (1 500 words & fig.)

1927 669 .1  
 The Metallurgist, p. 186, Supplement to the Engineer, No. 3755, December 30.  
 JONES (J. A.). — The effect of manganese on the properties of low-carbon steels. (1 400 words & tables.)

1927 669 .1  
 The Metallurgist, p. 188, Supplement to the Engineer, No. 3755, December 30.  
 Some mechanical properties of cast iron. (1 200 words.)

1927 669 .1  
 The Metallurgist, p. 191, Supplement to the Engineer, No. 3755, December 30.  
 Flow in a low-carbon steel at various temperatures. (1 100 words.)

1928 624. (0  
 Engineer, No. 3756, January 6, p. 7.  
 Bridge engineering in 1927. (2 500 words.)

1928 621 .3  
 Engineer, No. 3756, January 6, p. 7.  
 Electrical engineering in 1927. (5 300 words & fig.)

1928 621 .132.1  
 Engineer, No. 3756, January 6, p. 18.  
 Prime mover locomotives of 1927. (5 300 words & fig.)

1928 385. (06 .4 (.73)  
 Engineer, No. 3758, January 20, p. 64.  
 An American railway pageant. (3 800 words & fig.)

1928 621 .43  
 Engineer, No. 3758, January 20, p. 78.  
 The use of Diesel engines for peak load supply. (2 200 words.)

1928 621 .132.3 (.43) & 621 .134.3 (.43)  
 Engineer, No. 3758, January 20, p. 81.  
 The Schmidt-Henschel high-pressure locomotive. (2 000 words & fig.)

1928 621 .94 (.42)  
 Engineer, No. 3758, January 20, p. 84.  
 Double electrically-driven wet tool grinder (650 words & fig.)

### Engineering. (London.)

1927 625 .13 (.494)  
 Engineering, No. 3231, December 16, p. 767.  
 Reconstruction of Le Day railway viaduct, Switzerland. (3 100 words & fig.)

1927 669 .1 & 691  
 Engineering, No. 3231, December 16, p. 770.  
 The dangers of corrosion. (2 500 words.)

1927 621 .132.8 (.42)  
 Engineering, No. 3231, December 16, p. 771.  
 2 000-H. P. Ljungström turbine locomotive. (2 400 words & fig.)

1927 691  
 Engineering, No. 3231, December 16, p. 774.  
 The air-seasoning and conditioning of timber. (3 500 words & fig.)

1927 625 .13 (.42)  
 Engineering, No. 3231, December 16, p. 779.  
 TURNER (K. B.) & WALSH (R. E.). — The reconstruction of two railway swing-bridges. (1 000 words.)



1927 669 .1  
Engineering, No. 3231, December 16, p. 785.  
The manufacture and properties of alloy steels. (2 000 words.)

1927 62. (01 & 669 .1  
Engineering, No. 3232, December 23, p. 797.  
LEA (F. C.). — The effect of heat treatment on cold drawn steel tubes. (3 500 words, 5 tables & fig.)

1927 621 .9 (.42)  
Engineering, No. 3232, December 23, p. 805.  
Duplex drilling, boring, milling and screw-cutting machine. (750 words & fig.)

1927 621 .132.3 (.42 + .73) & 656 .222.1 (.42 + .73)  
Engineering, No. 3232, December 23, p. 816.  
Three-cylinder compound locomotive. (3 800 words, 4 tables & fig.)

1927 621 .131.3 (.73)  
Engineering, No. 3232, December 23, p. 823.  
FRY (L. H.). — Some experimental results from a three-cylinder compound locomotive. (4 600 words, 2 tables & fig.)

1927 62. (01 & 669 .1  
Engineering, No. 3232, December 23, p. 827.  
BULLEID (C. H.) & ALMOND (A. R.). — The fatigue of cast iron. (350 words & fig.)

1927 669 .1  
Engineering, No. 3233, December 30, p. 837.  
The mechanical properties of steel at high temperatures. (600 words & fig.)

1928 62. (01  
Engineering, No. 3235, January 13, p. 31.  
CARRINGTON (H.). — The deflection of flat plates fixed at the circumference. (2 500 words, 2 tables & fig.)

1928 621 .6 (.42)  
Engineering, No. 3235, January 13, p. 37.  
Pumps for oil handling. (1 300 words & fig.)

1928 621 .116 (.42)  
Engineering, No. 3235, January 13, p. 41.  
Non-jamming full-way stop valve. (600 words & fig.)

1928 656 .211.7 (.489)  
Engineering, No. 3235, January 13, p. 41.  
The Danish motor train-ferry « Korsør ». (2 600 words & fig.)

1928 621 .9 & 669 .1  
Engineering, No. 3235, January 13, p. 51.  
Effect of temperature on cutting tools and work. (2 400 words.)

1928 621 .31 (.43)  
Engineering, No. 3235, January 13, p. 58.  
The Klingenberg power station, Berlin. (3 000 words.)

1928 621 .7 (.42) & 725 .43 (.42)  
Engineering, No. 3236, January 20, p. 64.  
The Trafford Park Works of Messrs. Metropolitan Vickers Electrical Company, Limited. (5 000 words & fig.)

1928 621 .43 (.492)  
Engineering, No. 3236, January 20, p. 71.  
The Schelde-Sulzer marine Diesel engine. (1 100 words & fig.)

1928 621 .116 (.42)  
Engineering, No. 3236, January 20, p. 72.  
The Dvorkovitz low-temperature carbonisation system. (1 300 words & fig.)

1928 62. (01 & 69  
Engineering, No. 3236, January 20, p. 79.  
Concrete in the laboratory. (1 700 words.)

1928 669 .  
Engineering, No. 3236, January 20, p. 79.  
The detection of strain in steel. (2 100 words.)

1928 621 .11  
Engineering, No. 3236, January 20, p. 80.  
OAKDEN (J. C.). — The dimension theory of steam nozzle flow. (2 600 words.)

1928 621 .18 (.42) & 621 .39 (.42)  
Engineering, No. 3236, January 20, p. 85.  
Electric control in the boiler house. (2 400 words & fig.)

### Engineering News-Record. (New York.)

1928 624 .62 (.73)  
Engineering News-Record, No. 1, January 5, p. 17.  
Bridging the Grand Canyon with a 600-ft. steel arch. (800 words & fig.)

### Great Western Railway Magazine. (London.)

1928 385. (08 (.42)  
Great Western Ry. Magazine, January, p. 6.  
The past year's work in the principal departments. (16 000 words & fig.)

### Journal of the Institute of Transport. (London.)

1928 35.  
Journal, Institute of Transport, January, p. 115.  
KUHNE (C. H.). — Military transport vehicles. (30 000 words & fig.)

1928 65.  
Journal, Institute of Transport, January, p. 160.  
BLUMENFELD ELLIOT (J.). — Railway salesman ship and public relations work. (8 900 words.)

1928 656 .213  
Journal, Institute of Transport, January, p. 171.  
RYAN (G. T.). — The working of a railway department in a non-railway owned dock. (5 100 words.)

1928 385 .15  
Journal, Institute of Transport, January, p. 177.  
WILSON (J.). — Some aspects of state railway finance and accounting. (3 200 words.)

### Locomotive Railway Carriage & Wagon Review. (London.)

1928 621 .132.5 (.43) & 621 .133.1 (.43)  
Loc. Ry. Carriage & Wagon Review, January 14, p. 3.  
Pulverised coal-fired locomotive. (250 words & fig.)

1928 621 .95 (.42)  
Loc. Ry. Carriage & Wagon Review, January 14, p. 10.  
Piston valve chamber boring and facing machine, London Works, Great Western Ry. (1 000 words & fig.)

1928 621 .132.6 (.44)  
Loc. Ry. Carriage & Wagon Review, January 14, p. 13.  
Eight-coupled tank locomotive: Paris, Lyons & Mediterranean Ry. (1 200 words & fig.)

1928 656 .222.1 (.42)  
Loc. Ry. Carriage & Wagon Review, January 14, p. 15.  
SEATON (D.). — On the footplate of the Cornish Riviera Express. (1 100 words & fig.)

1928 621 .132.8 (.81)  
Loc. Ry. Carriage & Wagon Review, January 14, p. 21.  
New express passenger « Garratt » locomotives, San Paulo Ry. (1 200 words & fig.)

1928 621 .392 (.42)  
Loc. Ry. Carriage & Wagon Review, January 14, p. 23.  
Electric welding for rolling stock. (650 words & fig.)

1928 625 .216 (.42)  
Loc. Ry. Carriage & Wagon Review, January 14, p. 30.  
Wagon drawgear. (1 500 words & fig.)

### London & North Eastern Railway Magazine. (London.)

1928 621 .138.1 (.42)  
& N. E. Railway Magazine, January, p. 5.  
HUTCHINSON (O. P.). — Dairycoates engine shed, Hull. (750 words & fig.)

### Mechanical Engineering. (New York).

1927 621 .116  
Mechanical Engineering, December, p. 1300.  
BAILEY (E. G.). — Some factors in furnace design for high capacity. (4 200 words, 1 table & fig.)

1927 621 .16  
Mechanical Engineering, December, p. 1303.  
KREISINGER (H.) & PURCELL (T. E.). — Some operating data of large steam generating units. (1 500 words.)

1927 621 .9  
Mechanical Engineering, December, p. 1305.  
SPENCER (F. C.). — The development of machine tools from a user's viewpoint. (2 600 words.)

1927 621 .31  
Mechanical Engineering, December, p. 1309.  
FALES (E. N.). — A new propeller-type, high-speed windmill for electric generation. (3 200 words & fig.)

1927 62. (01 & 621 .83  
Mechanical Engineering, December, p. 1322.  
The influence of elasticity on gear-tooth loads. (1 500 words & 7 tables.)

1927 625 .214 (.73)  
Mechanical Engineering, December, p. 1325.  
SANDERS (W. C.). — The design and application of roller bearings to railway rolling stock. (5 600 words & fig.)

1927 621 .82  
Mechanical Engineering, December, p. 1335.  
McKEE (S. A.). — The effect of running in on journal bearing performance. (4 600 words, 1 table & fig.)

1928 33  
Mechanical Engineering, January, p. 7.  
Progress in management engineering. (6 300 words.)

1928 621 .8 & 656 .212.6  
Mechanical Engineering, January, p. 13.  
Progress in materials handling. (4 800 words & fig.)

1928 532  
Mechanical Engineering, January, p. 18.  
Progress in hydraulics. (3 200 words & fig.)

1928 621 .116  
Mechanical Engineering, January, p. 22.  
Progress in fuel utilization in 1927. (6 000 words & fig.)

1928 621 .4  
Mechanical Engineering, January, p. 28.  
Progress in oil- and gas- power engineering. (3 300 words.)

1928 621 .1  
Mechanical Engineering, January, p. 32.  
Progress in steam-power engineering. (3 400 words.)

1928 385 & 621  
Mechanical Engineering, January, p. 35.  
Progress in railroad mechanical engineering. (3 700 words, 1 table & fig.)

1928 669 .1  
Mechanical Engineering, January, p. 55.  
Progress in the iron and steel industry. (1 400 words.)

1928 621 .9  
Mechanical Engineering, January, p. 56.  
Progress in machine-shop practice. (4 200 words & fig.)

1928 621 .83  
Mechanical Engineering, January, p. 65.  
The influence of elasticity on gear-tooth loads. (700 words & 8 tables.)

### Modern Transport. (London.)

1927 385 .113 (.42 + .73)  
Modern Transport, No. 458, December 24, p. 7.  
BELL (R.). — British and American railway results. (2 100 words.)

1927 347 .763.4 (.73)  
Modern Transport, No. 459, December 31, p. 5.  
WILLARD (D.). — Railroad legislation in the United States. (1 900 words.)

1928 385 .113 (.43)  
Modern Transport, No. 460, January 7, p. 7.  
Satisfactory results on the German Railways. (1 800 words.)

1928 652 .62  
Modern Transport, No. 460, January 7, p. 17.  
Improvement of tramway services. (1 600 words.)

1928 656 .1 (.42) & 656 .2 (.42)  
Modern Transport, No. 461, January 14, p. 3.  
GRAHAM (Right Hon. W.). — Railway Companies and road transport. (2 100 words & fig.)

1928 625 .245 (.82)  
Modern Transport, No. 461, January 14, p. 7.  
British-built dynamometer car for service in South America. (1 600 words.)

1928 656 .211.5 (.42)  
Modern Transport, No. 461, January 14, p. 10.  
New ticket issuing and printing machines. (900 words & fig.)

1928 656 .253 (.54)  
Modern Transport, No. 461, January 14, p. 11.  
Automatic signalling in India. Day colour light system on Great Indian Peninsula Railway. (1 100 words.)

1928 656 .1 (.43) & 656 .2 (.43)  
Modern Transport, No. 461, January 14, p. 16.  
LEVERVE (G.). — Road transport and the German Railways. (400 words & 1 table.)

1928 624 .32 (.66) & 625 .62 (.66)  
Modern Transport, No. 462, January 21, p. 3.  
Completion of new bridge over the White Nile. Electrical power supply and tramways for Khartoum and Omdurman. (2 300 words & fig.)

1928 385. (01 (.  
Modern Transport, No. 462, January 21, p. 6.  
Trans-Saharan Railway. French Government bi (1 000 words.)

1928 621 .33 (.4  
Modern Transport, No. 462, January 21, p. 7.  
LEVERVE (G.). — German Railway progress (1 400 words & fig.)

1928 656 .259 (.7  
Modern Transport, No. 462, January 21, p. 9.  
SHERRINGTON (C. E. R.). — Railway problems home and abroad. Protection of road level crossing (2 100 words & fig.)

1928 656 .25 (06 (.4  
Modern Transport, No. 462, January 21, p. 11.  
Methods of holding the road. (1 700 words.)

1928 656 .1 & 656  
Modern Transport, No. 462, January 21, p. 18.  
Railway companies and road transport. (2 100 words)

### Proceedings, American Society of Civil Engineers (New York.)

1928 621 .33 (.73  
Proceed., Amer. Soc. of Civil Engineers, January, p.  
GIBBS (G.). — The Virginian Railway electrification (18 800 words, 6 tables & fig.)

### Railway Age. (New York.)

1927 625 .214 (.73  
Railway Age, No. 16, October 15, p. 709.  
SANDERS (W. C.). — Roller bearings on railway cars. (3 700 words & fig.)

1927 621 .132.8 (.73  
Railway Age, No. 16, October 15, p. 717.  
High pressure steam driven car is developed. (1 900 words & fig.)

1927 725 .31 (.73  
Railway Age, No. 16, October 15, p. 720.  
New Brownsville station is of attractive design (500 words & fig.)

1927 656 .211.7 (.73  
Railway Age, No. 16, October 15, p. 721.  
Grand Trunk Western builds flexible apron for ferry ship. (1 300 words & fig.)

1927 385. (09 (.73  
Railway Age, No. 16, October 15, p. 727.  
The beginnings of the Baltimore & Ohio. (1 900 words & fig.)



1927 613 .1 (.73) & 725 .3 (.73)  
 Railway Age, No. 17, Section one, Oct. 22, p. 757.  
 D'ESPOSITO (J.). — Some of the fundamental principles of air rights. (3 600 words & fig.)

1927 656 .284. (06 (.73)  
 Railway Age, No. 17, Section one, Oct. 22, p. 760.  
 Fire losses decrease in 1926. (3 400 words & fig.)

1927 656 .281. (01  
 Railway Age, No. 17, Section one, Oct. 22, p. 763.  
 SYMINGTON (T. H.). — Freight car derailments. (900 words & fig.)

1927 625 .245 (.73)  
 Railway Age, No. 17, Section one, Oct. 22, p. 774.  
 New Haven runs grandstands. (800 words & fig.)

1927 691 (.71) & 728 .5 (.71)  
 Railway Age, No. 17, Section one, Oct. 22, p. 775.  
 Heated enclosure makes work in winter possible. (900 words & fig.)

1927 621 .132.5 (.73)  
 Railway Age, No. 17, Section one, Oct. 22, p. 777.  
 Erie places 2-8-4 type locomotives in freight service. (900 words & 1 table.)

1927 656 .1 (.73) & 656 .2 (.73)  
 Railway Age, No. 17, Section two, Oct. 22, p. 801.  
 Existing carriers given prior highway rights. (3 400 words.)

1927 656 .1 (.942) & 656 .2 (.942)  
 Railway Age, No. 17, Section two, Oct. 22, p. 805.  
 POWLES LAND (G. T.). — South Australian Railways meet motor competition. (700 words & fig.)

1927 625 .245 (.73) & 656 .2 (.73)  
 Railway Age, No. 17, Section two, Oct. 22, p. 807.  
 Tractors and trailers used by North Shore Line. (600 words & fig.)

1927 656 .1 (.73) & 656 .2 (.73)  
 Railway Age, No. 17, Section two, Oct. 22, p. 810.  
 Railway bus lines get ready for winter operation. (700 words & fig.)

1927 656 .222.5 (.73)  
 Railway Age, No. 18, October 29, p. 827.  
 « Positive meet » system effects economy. (2 800 words & fig.)

1927 625 .1 (06 (.73)  
 Railway Age, No. 18, October 29, p. 830.  
 Bridge and building men hold most successful meeting. (9 600 words & fig.)

1927 621 .133.8 (.73)  
 Railway Age, No. 18, October 29, p. 838.  
 A power blow-off for locomotives. (600 words & fig.)

1927 621 .135.2 (.73)  
 Railway Age, No. 18, October 29, p. 839.  
 Driving box with adjustable brass. (400 words & fig.)

1927 625 .232 (.73)  
 Railway Age, No. 18, October 29, p. 841.  
 Delaware & Hudson remodels suburban equipment. (600 words & fig.)

1927 385 .1 (.73) & 385 .3 (.73)  
 Railway Age, No. 18, October 29, p. 843.  
 Utility commissioners hold meeting at Dallas. (5 400 words.)

1927 621 .139. (06 (.73), 625 .18 (06 (.73) & 625 .27 (06 (.73)  
 Railway Age, No. 18, October 29, p. 848.

Railway supply officers discuss buyers' market. (3 700 words & fig.)

1927 656 .212 (.73)  
 Railway Age, No. 19, November 5, p. 876.  
 Country's largest transfer station is placed in service. (3 600 words & fig.)

1927 385 .15 (.73)  
 Railway Age, No. 19, November 5, p. 881.  
 Pro and con of government ownership. (5 900 words.)

1927 625 .18 (.73)  
 Railway Age, No. 19, November 5, p. 887.  
 HALL (U. K.). — The control of emergency material stocks. (2 200 words & fig.)

1927 656 .259 (.73)  
 Railway Age, No. 19, November 5, p. 889.

HENDRIE (R. A.). — Telephone annunciators on Missouri-Kansas-Texas aid train dispatcher. (650 words & fig.)

1927 621 .335 (.73) & 621 .43 (.73)  
 Railway Age, No. 19, November 5, p. 890.  
 Oil-electric locomotive tested in passenger service. (700 words, 1 table & fig.)

1927 621 .132.3 (.73)  
 Railway Age, No. 19, November 5, p. 891.  
 4-8-2 type locomotives for the Missouri Pacific. (400 words, 1 table & fig.)

1927 385 .11 (.73)  
 Railway Age, No. 19, November 5, p. 893.  
 SPERRY (H. M.). — The trend of railway earnings shown in charts. (3 000 words, 2 tables & fig.)

1927 621 .33. (06 (.73)  
 Railway Age, No. 19, November 5, p. 897.  
 Electrical men discuss problems. (3 000 words & fig.)

1927 621 .131.2  
 Railway Age, No. 19, November 5, p. 900.  
 CAMPBELL (H. A. F.). — Notes on the steam locomotive. (1 500 words & fig.)

# Railway Engineer. (London.)

1928	621 .132 (.42)
Railway Engineer, January, p. 2.	
British locomotive practice in 1927. (1 400 words.)	
1928	313 : 656 .282 (.42)
Railway Engineer, January, p. 3.	
Failures of couplings. (700 words & 1 table.)	
1928	385. (09 .1 (.6) & 625 .176 (.6)
Railway Engineer, January, p. 7.	
African railways and gauges. (1 000 words, tables & fig.)	
1928	625 .232 (.42)
Railway Engineer, January, p. 8.	
Mechanical refrigerators on dining cars. (450 words & fig.)	
1928	621 .33 (.44)
Railway Engineer, January, p. 9.	
Paris-Orleans Railway electrification. (350 words & fig.)	
1928	621 .132.3 (.42)
Railway Engineer, January, p. 11.	
The « Royal Scot » class express locomotives, London Midland & Scottish Ry. (1 200 words & fig.)	
1928	621 .135. (01 (.42)
Railway Engineer, January, p. 15.	
Locomotive weights and axle loads. (300 words & 1 table.)	
1928	621 .39 (.42) & 621 .9 (.42)
Railway Engineer, January, p. 16.	
Crucible steel production in a high-frequency electric steel furnace. (1 600 words & fig.)	
1928	625 .1 (.42)
Railway Engineer, January, p. 18.	
An all-concrete railway station. (350 words & fig.)	
1928	621 .132 (.73)
Railway Engineer, January, p. 19.	
POULTNEY (E. C.). — Recent American locomotive practice. (2 400 words, 1 table & fig.)	
1928	625 .214
Railway Engineer, January, p. 24.	
New type of axle-box for railway rolling-stock. (1 300 words & fig.)	
1928	656 .212.6 (.42)
Railway Engineer, January, p. 26.	
A new electric platform truck. (450 words & fig.)	
1928	625 .245 (.68)
Railway Engineer, January, p. 27.	
New dynamometer car, South African Railways. (1 300 words & fig.)	

1928	625 .142.4 (.51)
Railway Engineer, January, p. 32.	
STRINGER (H.). — Reinforced concrete sleeper. (1 700 words & fig.)	

1928	656 .283 (.42)
Railway Engineer, January, p. 38.	
Railway accident report. Hull, London & North Eastern : February 14, 1927. (2 300 words & fig.)	

# Railway Engineering & Maintenance. (Chicago.)

1928	625 .14 (01 (.73)
Railway Engineering and Maintenance, January, p. 1.	
1927 a roadway year. 1928 equally promising (3 000 words.)	

1928	625 .113 (.73)
Railway Engineering and Maintenance, January, p. 4.	
BARTLETT (C. H.). — String lining of curves made easy. (3 200 words & fig.)	

1928	621 .133.7 (.73) & 725 .33 (.73)
Railway Engineering and Maintenance, January, p. 7.	
Better pumps cut operating costs. (2 400 words & fig.)	

1928	691 (.73)
Railway Engineering and Maintenance, January, p. 10.	
McGRAW (F. H.). — Making good concrete in the winter time. (1 500 words.)	

1928	625 .14 (.73)
Railway Engineering and Maintenance, January, p. 11.	
Will a concrete roadbed stand up? (2 200 words & fig.)	

1928	656 .284 (.73)
Railway Engineering and Maintenance, January, p. 11.	
KNOWLES (C. R.). — Fighting the great flood (5 200 words & fig.)	

1928	625 .144.4 (.73)
Railway Engineering and Maintenance, January, p. 20.	
Cleaning ballast at the rate of a mile a day. (1 500 words & fig.)	

1928	385 .524 (.73)
Railway Engineering and Maintenance, January, p. 21.	
Seven roads announce awards. (2 300 words.)	

1928	625 .122 (.73)
Railway Engineering and Maintenance, January, p. 21.	
Widen cut without obstructing the track. (600 words & fig.)	

# Railway Gazette & Railway News. (London.)

1928	621 .132.5 (.54)
Railway Gazette & News, No. 2, January 13, p. 41.	
New standard metre-gauge locomotives for India (500 words & fig.)	

1928 625 .232 (.68)  
 Railway Gazette & News, No. 2, January 13, p. 43.  
 New articulated sleeping cars, South African Railways. (1700 words & fig.)

1928 625 .113  
 Railway Gazette & News, No. 2, January 13, p. 46.  
 CUNNINGHAM (R. H.). — Plotting of transition curve diagrams. (150 words & fig.)

1928 621 .139 (.54), 625 .18 (.54) & 625 .27 (.54)  
 Railway Gazette & News, No. 2, January 13, p. 47.  
 Work of the Indian Store Department, 1926-27. (1900 words & 1 table.)

1928 621 .87 (.82)  
 Railway Gazette & News, No. 2, January 13, p. 49.  
 New 50-ton breakdown cranes for Argentina. (400 words & fig.)

1928 625 .245 (.43)  
 Railway Gazette & News, No. 2, January 13, p. 50.  
 Self-discharging wagon for the German Railways. (2250 words & fig.)

1928 725 .31 (.44)  
 Railway Gazette & News, No. 3, January 20, p. 68.  
 The new Lens station, Northern Railway of France. (600 words & fig.)

1928 621 .95 (.42)  
 Railway Gazette & News, No. 3, January 20, p. 69.  
 A new radial drilling machine. (500 words & fig.)

1928 385. (09 .1 (.51)  
 Railway Gazette & News, No. 3, January 20, p. 72.  
 HONDELINK (E. R.). — The eastern extension of the Lunghai Railway, China. (850 words & fig.)

1928 385. (09 .1 (.51)  
 Railway Gazette & News, No. 3, January 20, p. 73.  
 Railways in China and Manchuria. (700 words.)

1928 621 .139 (.42) & 656 .237 (.42)  
 Railway Gazette & News, No. 3, January 20, p. 74.  
 LEWIS EDWARDS (C.). — An engine mile — what is it? (1900 words & fig.)

1928 656 .211.5 (.42)  
 Railway Gazette & News, No. 3, January 20, p. 84.  
 Ticket-issuing machines on the « Underground ». (800 words & fig.)

# Railway Magazine. (London.)

1928 656 .211 (.42)  
 Railway Magazine, February, p. 87.  
 GAIRNS (J. F.). — Notable railway stations and their traffic. (11 000 words & fig.)

1928 621 .13 (01 (.42)  
 Railway Magazine, February, p. 104.  
 BREWER (F. W.). — Modern locomotive practice on the Great Western Railway. (5 000 words, 6 tables & fig.)

1928 625 .142.4 (.42)  
 Railway Magazine, February, p. 115.  
 Reinforced concrete sleepers on the London & North Eastern Ry. (600 words & fig.)

1928 656 .222.1 (.42)  
 Railway Magazine, February, p. 123.  
 ALLEN (C. J.). — British locomotive practice and performance. (6 400 words, 2 tables & fig.)

1928 385. (06 .4 (.73) & 621 .132.3 (.42)  
 Railway Magazine, February, p. 135.  
 Great Western Railway locomotive « King George V » in America. (1 200 words & fig.)

# Railway Mechanical Engineer. (New York.)

1928 621 .132.3 (.73)  
 Railway Mechanical Engineer, January, p. 5.  
 Five 4-8-4 type locomotives for the Delaware, Lackawanna & Western. (1 000 words, 1 table & fig.)

1928 625 .234 (.73)  
 Railway Mechanical Engineer, January, p. 7.  
 Annual winter meeting of the American Society of Mechanical Engineers. (4 800 words, 1 table & fig.)

1928 621 .135.2 (.73)  
 Railway Mechanical Engineer, January, p. 11.  
 Engine truck box used on the St. Louis-Santa Fe. (450 words & fig.)

1928 621 .134.1 (.73)  
 Railway Mechanical Engineer, January, p. 13.  
 Double power tender trucks on Missouri Pacific. (1 400 words & fig.)

1928 621 .134.1 (.73)  
 Railway Mechanical Engineer, January, p. 15.  
 Securing crossheads to piston rods without using keys. (900 words & fig.)

1928 385 .586  
 Railway Mechanical Engineer, January, p. 17.  
 ICHLER (W.). — Mechanical drawing and apprentice training. (1 200 words.)

1928 385 .586 (.73) & 625 .245 (.73)  
 Railway Mechanical Engineer, January, p. 18.  
 Illinois Central air brake car remodeled. (750 words & fig.)

1928 625 .232 (.73)  
 Railway Mechanical Engineer, January, p. 23.  
 Passenger car reconstruction on the Delaware & Hudson. (1 800 words & fig.)



1928 625 .26 (.73)  
 Railway Mechanical Engineer, January, p. 27.  
 Progressive repairs to hopper cars. (1300 words & fig.)

1928 625 .2 (01 (.73)  
 Railway Mechanical Engineer, January, p. 30.  
 DUNN (S. O.). — The general railway situation. (1700 words & fig.)

1928 621 .135.2 & 621 .85  
 Railway Mechanical Engineer, January, p. 32.  
 Machining and fitting up a special driving box. (2300 words & fig.)

1928 621 .138.3 (.73)  
 Railway Mechanical Engineer, January, p. 36.  
 New Haven inspection system reduces engine failures. (2600 words & fig.)

1928 621 .138.5 (.73) & 725 .33 (.73)  
 Railway Mechanical Engineer, January, p. 41.  
 Wabash enlarges locomotive shops. (2700 words, 1 table & fig.)

1928 621 .138.1  
 Railway Mechanical Engineer, January, p. 52.  
 A device for lighting locomotive fires. (750 words & fig.)

### Railway Signaling (Chicago).

1928 656 .258 (.73)  
 Railway Signaling, January, p. 1.  
 Electric interlocker and switch control speeds up yard operation. (2600 words & fig.)

1928 656 .256.3 (.73)  
 Railway Signaling, January, p. 5.  
 Signaling of Los Angeles & Salt Lake completed in 1927. (2600 words & fig.)

1928 656 .259 (.73)  
 Railway Signaling, January, p. 8.  
 Operating of crossing gates protected by home signals. (400 words & fig.)

1928 385 .3 (08 (.73) & 656 .253 (.73)  
 Railway Signaling, January, p. 9.  
 Interstate Commerce Commission report on Big Four train control. (2500 words & 2 tables.)

1928 656 .25 (08 (.73)  
 Railway Signaling, January, p. 11.  
 Signaling construction continued in large volume during 1927. (3400 words, tables & fig.)

1928 656 .25 (01 (.73)  
 Railway Signaling, January, p. 25.  
 Continued activity and development in signaling. (2200 words.)

### University of Illinois Bulletin. (Urbana.)

1927 55 & 6  
 University of Illinois Bulletin, No. 172, November, p.  
 WATSON (F. R.). — The absorption of sound materials. A method of measurement, with results on some materials. (5100 words, 6 tables & fig.)

1927 621 .1  
 University of Illinois Bulletin, No. 171, December, p.  
 KRATZ (A. P.), MACINTIRE (H. J.) & GOUL (R. E.). — Heat transfer in ammonia condense (10500 words, 5 tables & fig.)

### In Spanish.

#### Gaceta de los Caminos de hierro. (Madrid.)

1928 625 .2  
 Gaceta de los Cam. de hierro, n° 3535, 1° de enero, p.  
 Transportes frigorificos. (900 palabras.)

#### Revista de Obras Públicas. (Madrid.)

1928 625 .1  
 Revista de Obras Publicas, n° 1, 1° de enero, p. 9.  
 MENDIZABAL (D.). — Nuevo tipo de puente gtorio. (1800 palabras & fig.)

### In Italian.

#### L'Ingegnere. (Roma.)

1928 625 .62 (.4  
 L'Ingegnere, gennaio, p. 22.  
 D'ALO (G.). — Le nuove carrozze tranviarie Milano. (2000 parole & fig.)

1928 385 .113 (.4  
 L'Ingegnere, gennaio, p. 26.  
 L'esercizio delle ferrovie secondarie in Italia. (50 parole & 2 tabelle.)

1928 656 .211 (.4  
 L'Ingegnere, gennaio, p. 38.  
 LAMBARINI (M.). — La stazione ferroviaria Roma. (3800 parole, 2 tabelle & fig.)

1928 624 .63 (.4  
 L'Ingegnere, gennaio, p. 45.  
 BALLANTINI (U.). — Il nuovo ponte in cemento armato del Colomber sulla strada Longarone. — E. Casso. (1900 parole & fig.)

#### Rivista delle Comunicazioni ferroviarie. (Roma.)

1928 385. (01 (.4  
 Riv. delle comunic. ferrov., n° 2, 15 gennaio, p. 10.  
 Studi ed esperimenti sulle Ferovie dello Stato n ultimo esercizio. (2800 parole.)

1928 625 .163 (.45)  
v. delle comunic. ferrov., n° 2, 15 gennaio, p. 15.  
Un altro concorso per l'abbellimento delle stazioni.  
300 parole & fig.)

Rivista dei Trasporti. (Milano.)

1927 625 .62 (.45)  
Rivista dei Trasporti, novembre, p. 224.  
D'ALO (G.). — La riforma e la riorganizzazione delle  
ramvie di Milano. (5 700 parole & fig.)

1927 621 .133.7  
Rivista dei Trasporti, novembre. p. 230.  
LIBONATI (D.). — La depurazione meccanica delle  
acque per l'alimentazione delle caldaie delle locomotive.  
200 parole & fig.)

In Dutch.

De Ingenieur. (Den Haag.)

1928 624 .32  
De Ingenieur, n° 2, 14 Januari, p. 26.  
VAN GENDEREN STORT (E. A.). — Besteksbepa-  
ningen voor het vervaardigen en monteeren van ijzeren  
ruggen. (3 700 woorden & fig.)

1928 691. (01)  
De Ingenieur, n° 4, 28 Januari, p. B. 42.  
FRANK (C.). — Betonvastheid en cementkeuring.  
2 800 woorden & tafereelen.)

1928 621 .33 (.92)  
De Ingenieur, n° 4, 28 Januari, p. V. 1.  
DE GELDER (G.). — De electriche Staatsspoor-  
wegen in Ned. Indië. (11 000 woorden & fig.)

1928 621 .165  
De Ingenieur, n° 6, 11 Februari, p. W. 61.  
DRESDEN (D.). — Beproevingen van een 12 000 kw.  
Zoellyturbine en van een 16 000 kw. Brown Boveri tur-  
bine. (11 000 woorden, 4 tabellen & fig.)

De Locomotief. (Amsterdam.)

1927 621 .114  
De Locomotief, n° 1, 4 Januari, p. 2.  
Richtlijnen voor oliën en vetten. (2 100 woorden &  
1 tabel.)

In Polish.

INŻYNIER KOLEJOWY. (Warszawa.)

1928 656 .237  
Inżynier Kolejowy, 1 stycznia, str. 2.  
NAGEL (R.). — Ekonomia względnie komercjali-  
zacja Kolejnictwa. (5 300 słowa.)

1928 621 .134.1  
Inżynier Kolejowy, 1 stycznia, str. 10.  
LOPUSZYNSKI (W.). — Normalizacja parowozowych  
tłoków cylindrowych i suwakowych, oraz ich piersieni.  
(2 500 słowa, 2 tablice & rys.)

In Portuguese.

Revista das Estradas de ferro. (Rio de Janeiro.)

1927 621 .132.1 (.81)  
Revista das Estradas de ferro, n° 59, 30 de dez., p. 620.  
TAMM (V.). — As novas locomotivas da Central.  
(2 300 palavras & fig.)





# MONTHLY BIBLIOGRAPHY OF RAILWAYS <sup>(1)</sup>

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[ 016 .385 (02) ]

## I. — BOOKS.

### In French.

- 1927 62. (01)  
ARAGON (E.), ingénieur E. C. P.  
Résistance des matériaux appliquée aux constructions.  
Méthodes pratiques par le calcul et la statique graphique. Tome I.  
Paris (6°), Dunod, 92, rue Bonaparte. (12 × 18 cm.)  
viii-782 pages, 409 fig. (Prix : 62 francs.)
- 1928 621 .43 (02)  
BARDIN (R.), directeur de l'Ecole technique d'aéronautique et de construction automobile.  
Traité pratique sur la construction du moteur à explosions.  
Paris, Desforges, Girardot & C<sup>ie</sup>, éditeurs. 2° édition.  
155 pages, 65 fig. (Prix : 21 francs.)
- 1928 537. (02)  
BLANC (A. E.), ingénieur électromécanicien.  
Le chef mécanicien-électricien. Tome IV : Electricité générale.  
Paris (6°), Desforges, Girardot & C<sup>ie</sup>. 27 et 29, quai des Grands-Augustins. In-16, de 607 pages avec 230 fig.  
Prix : 45 francs.)
- 1928 536. (02)  
FABRY (Charles), membre de l'Institut, professeur à la Sorbonne et à l'Ecole Polytechnique.  
Eléments de thermodynamique.  
Paris (5°), Librairie Armand Colin, 103, boulevard Saint-Michel. In-16 (11 × 17 cm.), 39 fig. (Prix : 9 francs.)
- 1928 385 .1 (01)  
ROSS (Eugène).  
Faut-il faire le Transsaharien?  
Oran. Klintz frères. In-8° (14 × 23 cm.), de 181 pages avec cartes.

- 1927 31  
LIESSE (André), de l'Institut, professeur au Conservatoire national des arts et métiers et à l'Ecole des sciences politiques.  
La statistique, ses difficultés, ses procédés, ses résultats.  
Saint-Amand (Cher), impr. R. Bussière; Paris, libr. Félix Alcan, 108, boulevard Saint-Germain. In-16, viii-215 pages, fig. (Prix : 15 francs.)
- 1927 621 .33 (.44)  
PARODI (M.), ingénieur conseil de la Compagnie d'Orléans.  
Electrification partielle du réseau de la Compagnie d'Orléans.  
Paris (6°), Dunod, 92, rue Bonaparte. (22 × 31 cm.)  
298 pages, 215 fig. et 7 planches. (Prix : 48 francs.)
- 1927 385. (09 .3 (.43)  
PESCHAUD (Marcel), secrétaire général du Comité de direction des grands réseaux de chemins de fer français.  
Les chemins de fer allemands et la guerre.  
Paris-Limoges-Nancy. Charles Lavauzelle et C<sup>ie</sup>, impr.-éditeurs. In-8°, 338 pages.
- 1928 62. (08)  
RAIBAUD (J.), Lieutenant-Colonel, chef des travaux pratiques de mécanique à l'Ecole Polytechnique.  
Appareils et méthodes de mesures mécaniques.  
Paris (5°), Librairie Armand Colin, 103, boulevard Saint-Michel. In-16 (11 × 17 cm.), 87 fig. (Prix : 9 francs.)
- 1928 621 .9  
ROLAND (A.), ancien élève de l'Ecole pratique de Commerce et d'Industrie d'Evreux.  
Tableau universel de filetage permettant de trouver les roues pour faire tous les pas sur tous les tours et sur toutes les fraiseuses suivi de formules simples et pratiques appliquées dans les ateliers.  
Paris (6°), Desforges, Girardot & C<sup>ie</sup>. 27 et 29, quai des Grands-Augustins. In-16, de 160 pages avec fig. et un tableau hors texte. (Prix : 9 francs.)

(1) The numbers placed over the title of each book are those of the decimal classification proposed by the Railway Congress conjointly with the Office Bibliographique International, of Brussels. (See «Bibliographical Decimal Classification as applied to Railway Science», by WEISSENBRUCH in the number for November, 1897, of the *Bulletin of the International Railway Congress*, p. 1509).

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- 1928 341 .324 (.43)  
**Der Weltkrieg. 1914 bis 1918.** Bearbeitet im Reichs-  
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- 1928 621. (02)  
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- 1928 621 .33 (.494)  
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- 1927 385 .63  
**LÖNING (Otto), Dr., Landgerichtsdirektor in Berlin.**  
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- 1927 621 .9  
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 Leipzig, Verlag von Dr. Max Jänecke. In-8°. 7. gänzl.  
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 (Preis geh.: 11.40 Rm.)

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**Boiler regulations, Indian, modified to April 1927.**  
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**BRABBE (C. W.).**  
 Heating and ventilation. A handbook for architects  
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 seventh German edition of Rietschel-Brabbe « He-  
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- 1927 656 .24 (.73)  
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- 1928 621 .10  
**CHURCH (Edwin F.), Jr., Professor of Mechanical En-  
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 Elementary building science.  
 London, Humphrey Midford; New York, Oxford Uni-  
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 363 pages. (Price : \$5.50.)

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 The American reinforcement in the World War. Rail-  
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 Garden City, L. I. Published by Doubleday Page &  
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**IRWIN (W. K.),** Research Assistant, Faculty of  
 Applied Science and Engineering, School of Scien-  
 tific Research.  
 Chart for approximate stress determination in rein-  
 forced concrete chimneys.  
 Toronto, Ont. University of Toronto Press. (6 × 9  
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1927 313 : 656 .28 (.73)  
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 Accident Bulletin No. 95, Calendar year 1926.  
 Washington, D. C. Published by U. S. Govt. Printing  
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 Washington, D. C. Published by U. S. Govt. Printing  
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**LOEW (E. A.),** professor of electrical engineering, Uni-  
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 700. Baltimore Ave. Bulletin No. 23. (6 × 9 inches),  
 22 pages, illust.

1928 625 .111 (.73)  
**Progress of grade crossing elimination in the large  
 cities in the United States-**List of references. Costs,  
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 13 pages. Apply.

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 Washington, D. C., U. S. Dept. of Commerce, National  
 Bureau of Standards, George K. Burgess, Director.  
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1928 385. (09 .2 (.73)  
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1928 627  
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The design and construction of dams; including masonry, earth, rock-fill, timber and steel structures, also the principal types of movable dams. With a mathematical discussion and description of multiple arch dams by Fred A. Noetzli, D. Sc., M. Am. Soc. C. E., Consulting Engineer, Los Angeles, Calif.

New York, John Wiley & Sons, Inc.; London, Chapman & Hall, Ltd. (10 × 12 inches), 740 pages, 273 halftone and line cuts in text, 50 inset halftone and line cut plates, 91 large plates of drawings of designs of dams. (Price : \$17.50.)

[ 016 .385. (05 )

## II. — PERIODICALS.

### In French.

#### Annales des Mines. (Paris.)

1927 621 .118  
Annales des Mines, décembre, p. 444.

Bulletin des accidents d'appareils à vapeur survenus pendant l'année 1926. (Résumé résultant de l'étude des dossiers administratifs.) (Tableau.)

#### Annales des Ponts et Chaussées. (Paris.)

1927 62. (01  
Ann. des ponts et chauss., part. techn., nov.-déc., p. 205.  
HAEGELEN (M.). — Efforts élastiques développés dans les barrages-vouées par les diverses conditions de température et de retrait du béton. (2 600 mots & fig.)

1927 691  
Ann. des ponts et chauss., part. techn., nov.-déc., p. 264.  
FERET (R.). — Contribution à la connaissance des ciments fondus riches en alumine. (1 100 mots, 1 tableau & fig.)

#### Arts et Métiers. (Paris.)

1928 621 .133.7  
Arts et Métiers, février, p. 77.  
TALLEC. — A propos de l'épuration des eaux de chaudières. (1 900 mots.)

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1928 621 .392 & 66  
GALLO (A.).

Saldatura elettrica e trattamenti elettro-termici dei metalli.

Milano, Ulrico Hoepli, editore. (11 × 16 cm.), 321 pagine.

1927 313 .385 (.45) & 385. (08 (.45)  
MINISTERO DELLE COMUNICAZIONI (Amministrazione delle Ferrovie dello Stato).

Relazione per l'anno finanziario 1926-27.  
Roma, Provveditorato Generale dello Stato Libreria In-4°, 395 pagine, tabelle & fig.

### In Spanish.

1927 624 .61 & 624 .6  
RIBERA (Eugène).

Puentes de fabrica y hormigon armado.

Madrid, « Revista de Obras Publicas », Alfonso XI 3 y 5. In-8°. 4 vol.

#### Bulletin de la Société des ingénieurs civils de France. (Paris.)

1927 385. (09 .1 (.43  
Bull. de la Soc. des ing. civ. de France, sept.-oct., p. 9.  
ZAWADZKI. — Les chemins de fer en Pologne (3 300 mots & fig.)

1927 58 (.43  
Bull. de la Soc. des ing. civ. de France, sept.-oct., p. 9.  
SEKUTOWICZ (L.). — Les voies de communication en Pologne. (13 400 mots & fig.)

1927 624 .5 (.7  
Bull. de la Soc. des ing. civ. de France, sept.-oct., p. 10.  
LEINEKUGEL LE COCQ (G.). — L'extension l'application des ponts suspendus rigides et les grands ponts suspendus en Amérique. (6 000 mots.)

1927 669  
Bull. de la Soc. des ing. civ. de France, sept.-oct., p. 10.  
COURNOT. — La parkerisation. Méthode de protection des alliages ferreux contre la corrosion. (3 000 mots & 1 tableau.)

#### Bulletin de l'Union internationale des chemins de fer (Paris.)

1928 385. (09 .1 (.46  
Bull. de l'Union intern. des ch. de fer, janvier, p. 1.  
Le nouveau régime d'exploitation des Chemins de l'Etat portugais. (3 100 mots & 2 tableaux.)

1928 656 .237.4 (.42)  
Bull. de l'Union intern. des ch. de fer, janvier, p. 6.  
La Railway Clearing House. (7 500 mots.)

1928 385 .113 (.43)  
Bull. de l'Union intern. des ch. de fer, janvier, p. 21.  
Sixième rapport du Commissaire des Chemins de fer  
allemands à la Commission des Réparations. (23 000  
mots & tableaux.)

### Le Correspondant des Techniciens et Professionnels des chemins de fer. (Saint-Dizier)

1928 656 .254 (.44)  
Le Corresp. des Techn. et Prof. des ch. de fer, n° 1.  
15 janvier, p. 3.  
CAPITAN (M.). — Réflexions et suggestions sur le  
dispatching français. (2 600 mots.)

### Les chemins de fer et les tramways. (Paris.)

1928 621 .132.3 (.54)  
Les ch. de fer et les tramw., février, p. 23.  
VALAT (E.). — Un nouveau type de « Pacific ». (1 550 mots & fig.)

1928 625 .232 (.44)  
Les ch. de fer et les tramw., février, p. 24.  
Nouvelles voitures métalliques de la Compagnie du  
Nord. (850 mots & fig.)

1928 625 .258  
Les ch. de fer et les tramw., février, p. 26.  
CROZET (A.). — L'emploi des rails freins pour accé-  
lérer le triage des wagons. (2 500 mots & fig.)

1928 621 .9  
Les ch. de fer et les tramw., février, p. 31.  
Fixation des tourillons de manivelles et corrections  
l'usure. (2 400 mots & fig.)

1928 625 .258  
Les ch. de fer et les tramw., février, p. 31.  
Perfectionnements aux appareils d'enrayage des  
wagons dans les gares de triage. (1 200 mots & fig.)

1928 625 .619  
Les ch. de fer et les tramw., février, p. 42.  
Appareil pour actionner les aiguilles de voies. (450  
mots & fig.)

### L'Industrie des voies ferrées et des transports automobiles. (Paris.)

1928 621 .9  
L'Ind. voies ferrées et transp. autom., janvier, p. 15.  
Machine à cintrer et tremper les lames de ressort.  
(2 000 mots & fig.)

1928 625 .62  
L'Ind. voies ferrées et transp. autom., janvier, p. 105.  
CHAMPETIER de RIBES (J.). — Emploi des véhi-  
cules à un seul agent dans les exploitations de trans-  
port en commun. (12 300 mots & fig.)

1928 625 .62  
L'Ind. voies ferrées et transp. autom., janvier, p. 124.  
SCHEURER (Ch.). — Essai de simplification dans  
la remise des recettes par les conducteurs. (3 700 mots  
& tableaux.)

1928 625 .258  
L'Ind. voies ferrées et transp. autom., janvier, p. 171.  
WEBER (G.). — Note concernant un frein sur rails  
à sabots abrasifs. (4 700 mots & fig.)

### Revue universelle des transports. (Paris.)

1928 656 .256.3 (.44)  
Revue universelle des transports, janvier, p. 4.

Le block-system automatique de la ligne de Beau-  
mont à Creil (Chemin de fer du Nord français).  
(900 mots.)

1928 665 .882 (.493)  
Revue universelle des transports, janvier, p. 7.

La soudure autogène dans les ateliers de la Société  
Nationale des chemins de fer belges. (850 mots.)

### In German.

#### Archiv für Eisenbahnwesen. (Berlin.)

1928 313 .385 (.3)  
Archiv für Eisenbahnwesen, Heft 1. Jan.-Febr., S. 1.  
Die Eisenbahnen der Erde im Jahr 1925. (900 Wörter  
& Tabellen.)

1928 385. (01 (.57 + .58)  
Archiv für Eisenbahnwesen, Heft 1, Jan.-Febr., S. 64.  
CLEINOW (G.). — Eisenbahnbauten und Pläne in  
Russisch-Asien. (18 700 Wörter & Abb.)

1928 385. (09 .3 (.42)  
Archiv für Eisenbahnwesen, Heft 1. Jan.-Febr., S. 120.  
SPERING (A.). — Die Entwicklung der englischen  
Eisenbahnen seit dem Jahr 1921. (8 000 Wörter.)

1928 385. (01 (.438)  
Archiv für Eisenbahnwesen, Heft 1, Jan.-Febr., S. 145.  
CREMER (M.). — Die polnischen Eisenbahnen als  
Wirtschaftsbetrieb. (3 600 Wörter & Tabellen.)

1928 385. (01 (.71) & 385. (09 .3 (.71)  
Archiv für Eisenbahnwesen, Heft 1, Jan.-Febr., S. 166.  
VOIGT (G.). — Die Entstehung des gemischten Sys-  
tems in Canada. (7 000 Wörter.)

1928 385 .113 (.43)  
Archiv für Eisenbahnwesen, Heft 1. Jan.-Febr., S. 203.  
Die Deutsche Reichsbahn im Geschäftsjahr 1926.  
(1 700 Wörter & Tabellen.)

1928 385 .113 (.492)  
Archiv für Eisenbahnwesen, Heft 1. Jan.-Febr., S. 241.  
Die **Niederländischen Eisenbahnen** im Jahr 1926.  
(1 600 Wörter & Tabellen.)

1928 385 .113 (.439)  
Archiv für Eisenbahnwesen, Heft 1. Jan.-Febr., S. 249.  
RAJZ (K.). — Die **Königlich Ungarischen Staatsbahnen** im Betriebsjahr 1924-25. (450 Wörter & Tabellen.)

1928 385 .113 (.494)  
Archiv für Eisenbahnwesen, Heft 1. Jan.-Febr., S. 261.  
Die **Schweizerische Bundesbahnen** im Jahr 1926. (350 Wörter & Tabellen.)

1928 385 .113 (.495)  
Archiv für Eisenbahnwesen, Heft 1. Jan.-Febr., S. 268.  
ZIEBARTH. — Die **griechischen Staatsbahnen** im Jahr 1925-26. (400 Wörter & Tabellen.)

1928 385 .113 (.54)  
Archiv für Eisenbahnwesen, Heft 1. Jan.-Febr., S. 274.  
Die **Eisenbahnen** in Britisch-Indien 1925-26. (1 100 Wörter.)

1928 656 .234 (.43)  
Archiv für Eisenbahnwesen, Heft 1. Jan.-Febr., S. 285.  
Die **Fahrtpreise der Deutschen Reichsbahn** im Vergleich zu denen ausländischer Bahnen. (400 Wörter & Tabellen.)

1928 385 .113 (.497.1)  
Archiv für Eisenbahnwesen, Heft 1. Jan.-Febr., S. 298.  
Die **Staatseisenbahnen** des Königsreichs der Serben, Kroaten und Slovenen in den Jahren 1922-1924. (400 Wörter.)

#### Elektrotechnische Zeitschrift. (Berlin.)

1928 621 .335 (.43)  
Elektrotechnische Zeitschrift, Heft 1. 15. Januar, S. 1.  
KOPP (W.). — Die **Einphasen-Wechselstrom-Lokomotiven** der AEG für die Deutsche Reichsbahn. (1 800 Wörter, 1 Tabelle & Abb.)

1928 621 .335  
Elektrotechnische Zeitschrift, Heft 1. 15. Januar, S. 7.  
WACHSMUTH (B.). — **Mechanisch-optische Messvorrichtung** an einer Kurbelwellenschleifmaschine für elektrische Lokomotiven. (3 900 Wörter & Abb.)

1928 621 .333 (.431)  
Elektrotechnische Zeitschrift, Heft 1. 15. Januar, S. 13.  
MECKE (H.). — Die **neuen Berliner Stadtbahnmotoren**. (3 300 Wörter & Abb.)

1928 656 .255  
Elektrotechnische Zeitschrift, Heft 1. 15. Januar, S. 20.  
LOHAUSS (F.). — Die **Blockierung eingleisiger Strecken**. (4 100 Wörter & Abb.)

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1928 62. .06 (.43)  
Glaser's Annalen, Heft 2, 15. Januar, S. 22.  
PRZYGODE. — **Werkstofftagung und Werkstoffschau** (3 600 Wörter.)

1928 625 .13 (.43)  
Glaser's Annalen, Heft 2, 15. Januar, S. 27.  
**Inbetriebnahme der Ravennabrücke**. (1 100 Wörter & Abb.)

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#### Bulletin, American Railway Engineering Association. (Chicago.)

1927 625 .142 (.73) & 691 (.7)  
Bull. Americ. Ry. Eng. Ass<sup>on</sup>, November, p. 197.  
Report of Committee III. — **Ties**. (7 800 words, 6 tables & fig.)

1927 621 .3 (.7)  
Bull. Americ. Ry. Eng. Ass<sup>on</sup>, November, p. 255.  
Report of Committee XVIII and of the Electric section. American Railway Association. — **Electricity** (39 000 words, tables & fig.)

1927 625 .144 (.7)  
Bull. Americ. Ry. Eng. Ass<sup>on</sup>, November, p. 355.  
Report of Committee II. — **Ballast**. (4 800 words.)

1927 624. (01 (.73) & 721 .9 (.7)  
Bull. Americ. Ry. Eng. Ass<sup>on</sup>, November, p. 365.  
Report of Committee XV. — **Iron and steel structures**. (4 800 words.)

1927 621 .138.2 (.73) & 725 .33 (.7)  
Bull. Americ. Ry. Eng. Ass<sup>on</sup>, November, p. 375.  
Report of Committee XXIII. — **Shops and locomotive terminals**. (5 400 words & fig.)

1927 656 .211.4 (.73) & 656 .212 (.7)  
Bull. Americ. Ry. Eng. Ass<sup>on</sup>, December, p. 397.  
Report of Committee XIV. — **Yards and terminals**. (18 500 words, 11 tables & fig.)

1927 656 .2 (.7)  
Bull. Americ. Ry. Eng. Ass<sup>on</sup>, December, p. 439.  
Report of Committee XXI. — **Economics of railway operation**. (15 000 words, 7 tables & fig.)

1927 625 .11 (.7)  
Bull. Americ. Ry. Eng. Ass<sup>on</sup>, December, p. 475.  
Report of Committee XVI. — **Economics of railway location**. (6 000 words, 2 tables & fig.)

1927 625 .17 (.7)  
Bull. Americ. Ry. Eng. Ass<sup>on</sup>, December, p. 491.  
Report of Committee XXII. — **Economics of railway labor**. (3 000 words.)



- 1927 624 .2 (.73)  
ull. Americ. Ry. Eng. Ass<sup>on</sup>, December, p. 503.  
Report of Committee VII. — **Wooden bridges and**  
**restles.** (3 600 words.)
- 1927 625 .1 (02 (.73)  
ull. Americ. Ry. Eng. Ass<sup>on</sup>, December, p. 513.  
Report of Committee XII. — **Rules and organization.**  
(4 800 words.)
- 1928 625 .12 (.73)  
ull. Americ. Ry. Eng. Ass<sup>on</sup>, January (part 1), p. 525.  
Report of Committee I. — **Roadway.** (11 500 words  
& fig.)
- 1928 625 .143 (.73)  
ull. Americ. Ry. Eng. Ass<sup>on</sup>, January (part 1), p. 557.  
Report of Committee IV. — **Rail.** (8 500 words,  
tables & fig.)
- 1928 625 .14 (.73)  
ull. Americ. Ry. Eng. Ass<sup>on</sup>, January (part 1), p. 593.  
Report of Committee V. — **Track.** (4 800 words &  
& fig.)
- 1928 693 (.73)  
ull. Americ. Ry. Eng. Ass<sup>on</sup>, January (part 1), p. 605.  
Report of Committee VIII. — **Masonry.** (13 200 words,  
tables & fig.)
- 1928 656 .25 (.73)  
ull. Americ. Ry. Eng. Ass<sup>on</sup>, January (part 1), p. 641.  
Report of Committee X. — **Signals and interlocking.**  
(8 000 words.)
- 1928 625 .162 (.73) & 656 .259 (.73)  
ull. Americ. Ry. Eng. Ass<sup>on</sup>, January (part 1), p. 675.  
Report of Committee IX. — **Grade crossings.** (11 000  
words, 2 tables & fig.)
- 1928 691 (.73) & 698 (.73)  
ull. Americ. Ry. Eng. Ass<sup>on</sup>, January (part 1), p. 707.  
CUSHING (W. C.). — **The purchase of materials,**  
**tools, appliances and supplies.** (6 000 words & fig.)
- 1928 656 .284 (.73)  
ull. Americ. Ry. Eng. Ass<sup>on</sup>, January (part 2), p. 1.  
The Mississippi Valley flood 1927. (60 000 words,  
tables & fig.)

### Electric Railway Journal. (New York.)

- 1928 385 .11 (.73)  
Electric Railway Journal, No. 2, January 14, p. 42.  
**Railway operations show basic improvement.** (1 500  
words & fig.)
- 1928 625 .2 (.75)  
Electric Railway Journal, No. 2, January 14, p. 45.  
\$246 142 000 expenditure planned for **plant and ma-**  
**terials in 1928.** (1 300 words, 1 table & fig.)
- 1928 625 .1 (01 (.73)  
Electric Railway Journal, No. 2, January 14, p. 51.  
Marked increase in **track construction in 1927.** (1 900  
words, 2 tables & fig.)

- 1928 621 .338 (.73)  
Electric Railway Journal, No. 2, January 14, p. 56.  
**Passenger car purchases low in 1927.** (2 900 words,  
9 tables & fig.)
- 1928 656 .1 (.73) & 656 .2 (.73)  
Electric Railway Journal, No. 2, January 14, p. 63.  
Expansion of **bus operation** continued during past  
year. (1 600 words, 3 tables & fig.)
- 1928 385 .11 (.73)  
Electric Railway Journal, No. 2, January 14, p. 79.  
RICHY (A. S.). — **Electric railway costs and fares**  
**in 1927.** (1 600 words, 1 table & fig.)
- 1928 621 .333 (.73)  
Electric Railway Journal, No. 3, January 21, p. 107.  
**Brush-holder troubles and how they are overcome.**  
(3 000 words & fig.)
- 1928 625 .236  
Electric Railway Journal, No. 3, January, p. 111.  
**Machines scrub as well as wash cars.** (1 000 words  
& fig.)
- 1928 625 .26 (.73)  
Electric Railway Journal, No. 3, January 21, p. 113.  
**Turning cars on their sides facilitates general re-**  
**pairs.** (1 100 words & fig.)
- 1928 625 .142.4 (.73)  
Electric Railway Journal, No. 3, January 21, p. 114.  
**Concrete beam track construction used in Atlanta.**  
(600 words & fig.)
- 1928 614 .8 (.73)  
Electric Railway Journal, No. 4, January 28, p. 149.  
**Safety a science at Louisville.** (2 500 words & fig.)
- 1928 621 .333 (.73)  
Electric Railway Journal, No. 4, January 28, p. 152.  
BETHEL (C.). — **Double-reduction motor drive with**  
**spring suspension.** (2 400 words, 1 table & fig.)
- 1928 388 (.73)  
Electric Railway Journal, No. 4, January 28, p. 155.  
Philadelphia tackles its **street congestion problem.**  
(2 700 words & fig.)

### Engineer. (London.)

- 1928 621 .131.3 & 621 .134  
Engineer, No. 3759, January 27, p. 108.  
Some experimental results from a **three-cylinder**  
**compound locomotive.** (4 000 words.)
- 1928 625 .253 (.42)  
Engineer, No. 3759, January 27, p. 109.  
**Pressed steel vacuum brake cylinders.** (3 600 words.)
- 1928 621 .85 (.42)  
Engineer, No. 3759, January 27, p. 110.  
**A converted drop hammer plant.** (1 400 words & fig.)

- 1928 625 .143.3 & 625 .212  
The Metallurgist, p. 1, Supplement to the Engineer,  
No. 3759, January 27.  
Rails and tires. (1 400 words.)
- 1928 62. (01 & 669  
The Metallurgist, p. 7, Supplement to the Engineer,  
No. 3759, January 27.  
Internal stresses. (1 800 words.)
- 1928 669  
The Metallurgist, p. 10, Supplement to the Engineer,  
No. 3759, January 27.  
The variability of castings. (1 100 words, 1 table  
& fig.)
- 1928 62. (01  
The Metallurgist, p. 11, Supplement to the Engineer,  
No. 3759, January 27.  
The yield-point. (1 600 words & fig.)
- 1928 62. (01 & 669 .1  
The Metallurgist, p. 13, Supplement to the Engineer,  
No. 3759, January 27.  
The properties of steel at high and low temperatures.  
(2 000 words & fig.)
- 1928 621 .116 & 669 .1  
The Metallurgist, p. 15, Supplement to the Engineer,  
No. 3759, January 27.  
Steam at high temperatures. (850 words.)
- 1928 625 .13 (.42)  
Engineer, No. 3761, February 10, p. 153.  
The Post Office tube railway, London. (4 700 words  
& fig.)
- 1928 536  
Engineer, February 10, p. 165.  
Heat transmission through boiler tubes. (1 900 words,  
1 table & fig.)
- 1928 621 .94 (.43)  
Engineer, February 10, p. 166.  
A new lathe and a new tool. (1 200 words & fig.)

### Engineering. (London.)

- 1928 625 .4 (.42)  
Engineering, No. 3237, January 27, p. 92.  
The Post Office tube railway, London. (4 200 words  
& fig.)
- 1928 621 .131.3 & 621 .134  
Engineering, No. 3237, January 27, p. 103.  
Test results of a three-cylinder compound locomotive.  
(3 000 words.)
- 1928 621 .31 (.73)  
Engineering, No. 3239, February 10, p. 177.  
132 000 volt cable design. (3 600 words & fig.)

### Engineering News-Record. (New York.)

- 1928 625 .12  
Engineering News-Record, No. 2, January 12, p. 67.  
PAUL (C. H.). — Earth moving mechanized. (3 800  
words & fig.)
- 1928 624. (0  
Engineering News-Record, No. 2, January 12, p. 70.  
LINDENTHAL (G.). — Some thoughts on to  
bridges. (2 700 words & fig.)
- 1928 625 .13 (.73)  
Engineering News-Record, No. 3, January 19, p. 100.  
GIBBS (S. W.). — Construction methods on Oakland  
estuary tube. (4 000 words & fig.)
- 1928 62. (0  
Engineering News-Record, No. 3, January 19, p. 106.  
VAN DER MEY (J. C.) & SPITZER (F. H.). —  
Column deflection method for designing lateral bracing.  
(1 500 words, 1 table & fig.)
- 1928 62. (01 & 669  
Engineering News-Record, No. 3, January 19, p. 108.  
Maximum load for treated poles measured in to  
series. (500 words & fig.)
- 1928 625 .7 (.7  
Engineering News-Record, No. 3, January 19, p. 117.  
Road builders discuss contracting and county road  
(4 900 words.)
- 1928 625 .14 (.7  
Engineering News-Record, No. 4, January 26, p. 151.  
Track with concrete base gives successful results  
(900 words.)
- 1928 624. (0 & 669  
Engineering News-Record, No. 4, January 26, p. 155.  
MOISSEIFF (L. S.). — High-strength steels  
modern bridges. (1 300 words.)
- 1928 62. (06 (.7  
Engineering News-Record, No. 4, January 26, p. 156.  
American Society of Civil Engineers holds 7  
annual meeting. (5 800 words.)
- Journal, Permanent Way Institution. (London.)
- 1927 625 (.42) & 656 (.  
Journal, Perm. Way Inst., December, p. 199.  
FLETCHER (B. P.). — The engineering aspects  
road competition. (2 900 words.)
- 1927 656 .284 (.  
Journal, Perm. Way Inst., December, p. 208.  
CRUIKSHANK (J.). — Floods in Pahang (F. M.)  
in December 1926 and subsequent repair works on  
East Coast Ry. (4 400 words & fig.)
- 1927 625 .144 (.  
Journal, Perm. Way Inst., December, p. 220.  
COCK (H. G.). — Re-laying the central line, Tan  
nyika Railways from Dar-Es-Salaam to kilometre  
(4 100 words & fig.)

1927 625 .144 (.42)  
Journal, Perm. Way Inst., December, p. 239.  
GARN (G.). — Method of changing points, crossings and timbers in a terminal yard by platelaying gangs. (2 400 words.)

1927 625 .13 (.42)  
Journal, Perm. Way Inst., December, p. 235.  
STEPHEN (J.). — Repairs to bridges. (1 300 words.)

### Modern Transport. (London.)

1928 621 .33 (.54)  
Modern Transport, No. 463, January 28, p. 3.  
Railway electrification in India. Completion of Bombay, Baroda and Central India suburban scheme. (2 700 words & fig.)

1928 621 .232 (.68)  
Modern Transport, No. 463, January 28, p. 5.  
Twin articulated sleeping cars for tourist traffic. South African Railways. (1 700 words & fig.)

1928 656 .1 (.42) & 656 .2 (.42)  
Modern Transport, No. 463, January 28, p. 12.  
Traders and Railways. Opposition to road transport proposals. (2 700 words & fig.)

1928 625 .232 (.54)  
Modern Transport, No. 466, February 18, p. 3.  
Indian-built royal saloons for the King and Queen of Afghanistan. (1 200 words & fig.)

1928 656 .222.1  
Modern Transport, No. 466, February 18, p. 4.  
Acceleration of railway services. (2 000 words.)

1928 625 .13 (.42)  
Modern Transport, No. 466, February 18, p. 5.  
The Post Office tube railway. No. 2: — Conveyors, elevators, and spiral chutes. (2 000 words & fig.)

1928 656 .257 (.42)  
Modern Transport, No. 466, February 18, p. 7.  
Double-wire system of point operation. (1 750 words & fig.)

1928 625 .14 (.73)  
Modern Transport, No. 466, February 18, p. 10.  
Reduction of permanent way maintenance costs. Concrete track beds in the United States. (2 400 words & fig.)

1928 656 .1 (.42) & 656 .2 (.42)  
Modern Transport, No. 466, February 18, p. 21.  
Railway companies and road transport. (1 400 words.)

### Proceedings, Institution of Civil Engineers. (London.)

1928 531  
Inst. of Civil Eng., Eng. abstracts, No. 34, Jan., p. 13.  
I. — Measurement, and measuring- and recording-instruments. (9 300 words & fig.)

1928 62. (01 & 691  
Inst. of Civil Eng., Eng. abstracts, No. 34, Jan., p. 30.  
II. — Engineering materials. (17 300 words.)

1928 624 .69 & 721  
Inst. of Civil Eng., Eng. abstracts, No. 34, Jan., p. 61.  
III. — Structures. (17 900 words & fig.)

1928 621  
Inst. of Civil Eng., Eng. abstracts, No. 34, Jan., p. 94.  
IV. — Transformation, transmission, and distribution of energy. (32 000 words & fig.)

1928 621  
Inst. of Civil Eng., Eng. abstracts, No. 34, Jan., p. 156.  
V. — Mechanical processes, appliances, and apparatus. (8 000 words & fig.)

1928 62 & 656  
Inst. of Civil Eng., Eng. abstracts, No. 34, Jan., p. 172.  
VI. — Specialized engineering practice. (30 000 words & fig.)

### Railway Age. (New York.)

1927 656 .215 (.73)  
Railway Age, No. 20, November 12, p. 922.

MAHAN (H. E.) & SWACKHAMER (R. J.). — The lighting of railroad yards. (2 700 words & fig.)

1927 621 .132.8 (01  
Railway Age, No. 20, November 12, p. 929.

GUIDONI (A.). — The possibilities of the motor rail car. (1 800 words, 4 tables & fig.)

1927 625 .232 (.73)  
Railway Age, No. 20, November 12, p. 933.

Union Pacific receives eight new observation cars. (2 000 words & fig.)

1927 385 .14 (.73)  
Railway Age, No. 20, November 12, p. 936.

Rate regulation and capital requirements. (3 800 words.)

1927 621 .138.2 (.73)  
Railway Age, No. 20, November 12, p. 939.

New coaling station has 2 400 tons storage capacity. (750 words & fig.)

1927 725 .23 (.73)  
Railway Age, No. 20, November 12, p. 941.

Pennsylvania supply departments occupy new quarters. (850 words & fig.)

1927 656 .284 (.73)  
Railway Age, No. 20, November 12, p. 945.

Disastrous floods in New England. (2 400 words.)

1927 625 .143.3 (.73)  
Railway Age, No. 20, November 12, p. 947.

Interstate Commerce Commission Bureau of Safety reports on transverse fissures. (3 300 words & fig.)



1927 656 .211.7  
Railway Age, No. 20, November 12, p. 950.  
Comprehensive plan outlined for railways owning ships. (3 700 words.)

1927 621 .138.5 (.73) & 725 .33 (.73)  
Railway Age, No. 21, November 19, p. 969.  
Wabash employs novel plan to enlarge locomotive shops. (2 700 words & fig.)

1927 385. (07.2 (.73) & 625 .251 (.73)  
Railway Age, No. 21, November 19, p. 973.  
Railroad men visit Purdue test laboratories. (1 200 words & fig.)

1927 385. (08 (.73)  
Railway Age, No. 21, November 19, p. 977.  
Florida roads have experienced a phenomenal development. (3 000 words, 1 table & fig.)

1927 385 .11 (.73)  
Railway Age, No. 21, November 19, p. 984.  
New accounting plan presented. (4 400 words.)

1927 621 .132.5 (.73)  
Railway Age, No. 21, November 19, p. 989.  
2-8-4 type locomotives for the Chicago & North Western. (1 200 words, 1 table & fig.)

1927 625 .215 (.73)  
Railway Age, No. 21, November 19, p. 996.  
Symington double truss side frame. (400 words & fig.)

1927 385. (061 .4  
Railway Age, No. 21, November 19, p. 997.  
American Railway Association and Association of Railway Executives meet in New York. (3 300 words.)

1927 621 .13 (0 (.73)  
Railway Age, No. 22, Section one, November 26, p. 1025.  
BRUCE (A. W.). — The locomotive yardstick. (2 700 words & fig.)

1927 656 .222 (.73)  
Railway Age, No. 22, Section one, November 26, p. 1030.  
« Maintrackers » operated efficiently on the Lehigh Valley. (3 600 words & fig.)

1927 625 .1 (.73)  
Railway Age, No. 22, Section one, November 26, p. 1037.  
Florida roads spent millions in construction during boom. (4 900 words & fig.)

1927 656 .284 (.73)  
Railway Age, No. 22, Section one, November 26, p. 1048.  
New England roads report progress. (4 000 words & fig.)

1927 656 .1 (.73) & 656 .2 (.73)  
Railway Age, No. 22, Section two, November 26, p. 1071.  
Pennsylvania begins operation of third bus line. (900 words & fig.)

1927 347 .763 (.73)  
Railway Age, No. 22, Section two, November 26, p. 1076.  
Utilities Commissioners discuss motor transport (3 000 words.)

1927 656 .1 (.73) & 656 .2 (.73)  
Railway Age, No. 22, Section two, November 26, p. 1077.  
SWIFT IVES (H.). — Insurance of highway carrier (3 300 words.)

1927 656 .1 (.73) & 656 .2 (.73)  
Railway Age, No. 22, Section two, November 26, p. 1085.  
HANRAHAN (M. T.). — Handling express by tractor and trailer. (1 500 words.)

1927 625 .1 (.73)  
Railway Age, No. 23, December 3, p. 1097.  
Concrete features extensive improvements on the Richmond, Fredericksburg & Potomac Ry. (4 200 words & fig.)

1927 625 .232 (.73)  
Railway Age, No. 23, December 3, p. 1107.  
Nickel Plate buys two dining cars. (750 words & fig.)

1927 621 .139 (.73), 625 .18 (.73) & 625 .27 (.73)  
Railway Age, No. 23, December 3, p. 1109.  
STEVENS (H. C.). — Wabash conducts supply work on retail plan. (1 800 words & fig.)

1927 621 .132.3 (.73)  
Railway Age, No. 23, December 3, p. 1121.  
Lackawanna buys five 4-8-4 type locomotives. (1 000 words, 1 table & fig.)

1927 655 (.73)  
Railway Age, No. 23, December 3, p. 1127.  
A ticket office printing machine for railroads. (70 words & fig.)

1927 625 .243 (.73)  
Railway Age, No. 24, December 10, p. 1149.  
New Haven redesigned 30-ton box cars. (800 words & fig.)

1927 625 .143 (.73)  
Railway Age, No. 24, December 10, p. 1155.  
BRONSON (C. B.). — Are we making progress in rail-service? (2 000 words & 1 table.)

1927 656 .25  
Railway Age, No. 24, December 10, p. 1157.  
SANGSTER (A.). — Cost accounting and its problems. (3 500 words.)

1927 625 .245 (.73)  
Railway Age, No. 24, December 10, p. 1161.  
A dual side-pivot drop-door air dump car. (700 words & fig.)

1927 385 .3 (08 (.73)  
Railway Age, No. 24, December 10, p. 1162.  
Interstate Commerce Commission. (2 600 words.)

1927 621 .138.2 (.73)  
 Railway Age, No. 24, December 10, p. 1165.  
 Rapid fueling facilities for rail motor cars. (400 words & fig.)

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1927 625 .172 (.73)  
 Railway Age, No. 24, December 10, p. 1167.  
 An improved track mower. (750 words & fig.)

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1927 625 .216 (.73)  
 Railway Age, No. 24, December 10, p. 1169.  
 Coupler centering device. (450 words & fig.)

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1928 656 .223.2 (.73)  
 Railway Age, No. 24, December 10, p. 1195.  
 Lackawanna handles anthracite traffic skillfully. (400 words & fig.)

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1927 385 .113 (.73) & 621 .33 (.73)  
 Railway Age, No. 25, December 17, p. 1200.  
 VANDERSLUIS (W. M.). — Illinois Central suburban service. (1800 words & fig.)

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1927 385 .31 (.73)  
 Railway Age, No. 25, December 17, p. 1203.  
 DUNN (S. O.). — The question of railroad valuation. (5800 words.)

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1927 625 .142.2 (.489) & 691 (.489)  
 Railway Age, No. 25, December 17, p. 1212.  
 Danish Railways get more than 30 years life from ties. (1500 words & fig.)

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1927 621 .133.7 (.71)  
 Railway Age, No. 25, December 17, p. 1217.  
 PORTER (J. W.). — How the Canadian National developed a water supply. (1900 words & fig.)

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1927 621 .134.1 (.73) & 621 .136 (.73)  
 Railway Age, No. 25, December 17, p. 1221.  
 Missouri Pacific tests power tender trucks. (1500 words & fig.)

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1927 725 .31 (.71)  
 Railway Age, No. 26, Section one, December 24, p. 1243.  
 Canadian Roads open impressive Union Station at Toronto. (4800 words & fig.)

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1927 656  
 Railway Age, No. 26, Section one, December 24, p. 1251.  
 GUGGENHEIM (H. F.). — The future of air transport. (3500 words.)

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1927 621 .133.1  
 Railway Age, No. 26, Section one, December 24, p. 1255.  
 WANAMAKER (E.). — Future power rail car fuels. (400 words & fig.)

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1927 656 .256.3 (.73)  
 Railway Age, No. 26, Section one, December 24, p. 1261.  
 New Haven installs modern signalling. (1000 words & fig.)

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1927 656 .237  
 Railway Age, No. 26, Section one, December 24, p. 1269.  
 SANGSTER (A.). — Recent developments in cost accounting. (4300 words.)

1927 385 .21 (.73)  
 Railway Age, No. 26, Section one, December 24, p. 1272.  
 HARBESON (R. W.). — New York State barge canal and the Railroads. (1300 words.)

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1927 656 .1 (.73) & 656 .284 (.73)  
 Railway Age, No. 26, Section two, December 24, p. 1289.  
 Motor coach valuable asset in emergency. (1800 words, 1 table & fig.)

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1927 656 .1 (.73) & 656 .2 (.73)  
 Railway Age, No. 26, Section two, December 24, p. 1297.  
 Denver & Rio Grande Western operates on 500 miles of highway. (1000 words & fig.)

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1927 621 .14  
 Railway Age, No. 26, Section two, December 24, p. 1301.  
 CHURCH (H. D.). — The motor coach of the future. (3300 words.)

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1927 656 .1 (.73) & 656 .2 (.73)  
 Railway Age, No. 26, Section two, December 24, p. 1303.  
 SCARR (F. J.). — Economics aspect of hauling L. C. L. freight by motor trucks. (2200 words & 2 tables.)

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1927 656 .1 (.73) & 656 .2 (.73)  
 Railway Age, No. 26, Section two, December 24, p. 1305.  
 FRITCH (H. F.). — Rail car or motor coach? (3400 words & fig.)

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1927 621 .137.3 (.73)  
 Railway Age, No. 27, December 31, p. 1317.  
 FERTIG (H. R.). — Triple-crewing yard locomotives. (2500 words, 6 tables & fig.)

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1927 656 .284 (.73)  
 Railway Age, No. 27, December 31, p. 1321.  
 BLAESS (A. F.). — The work of the railways in the Mississippi River flood. (1400 words & fig.)

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1927 385 .114 (.73) & 621 .13. (0 (.73)  
 Railway Age, No. 27, December 31, p. 1323.  
 TITUS (H. J.). — Importance of locomotive assignment. (5300 words.)

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1927 656 .237  
 Railway Age, No. 27, December 31, p. 1331.  
 SANGSTER (A.). — The seasonal problem in cost accounting. (3200 words.)

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1928 625 .14 (.73)  
 Railway Age, No. 2, January 14, p. 129.  
 CHIPMAN (P.). — What one year's service on concrete roadbed has shown. (5500 words & fig.)

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1928 656 .253 (.73)  
 Railway Age, No. 2, January 14, p. 139.  
 Pennsylvania installs code system of train stop with signaling. (3300 words, 1 table & fig.)

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1928 385 .3 (.73)  
 Railway Age, No. 2, January 14, p. 142.  
 Railway unification legislation urged. (2000 words.)

1928 385.3 (08 (.73) & 313 : 656 .284 (.73)  
 Railway Age, No. 2, January 14, p. 144.  
 Annual report of the Bureau of locomotive inspection. (1300 words, 3 tables & fig.)

1928 625 .234 (.73)  
 Railway Age, No. 2, January 14, p. 146.  
 Pullman car is gas heated during lay-over. (400 words & fig.)

1928 627 (.73) & 656 .213 (.73)  
 Railway Age, No. 3, January 21, p. 180.  
 Erie builds large modern pier in New York harbor. (3700 words & fig.)

1928 621 .139 (.73), 625 .18 (.73) & 625 .27 (.73)  
 Railway Age, No. 3, January 21, p. 185.  
 Pennsylvania experiments with budget for purchases. (5200 words, 1 table & fig.)

1928 656 .212.5 (.73) & 656 .212.6 (.73)  
 Railway Age, No. 3, January 21, p. 195.  
 Daily cost figures a valuable aid. (1900 words, 3 tables & fig.)

1928 621 .18 (.73)  
 Railway Age, No. 3, January 21, p. 200.  
 Northern Pacific power plant effects large savings. (1800 words, 2 tables & fig.)

1928 656 .212.5 (.73)  
 Railway Age, No. 4, January 28, p. 225.  
 Comprehensive reports speed yard operations at Selkirk. (2800 words & fig.)

1928 532 (.73) & 656 .284 (.73)  
 Railway Age, No. 4, January 28, p. 233.  
 The Jadwin flood plan and the railroads. (2400 words & fig.)

1928 625 .25 (06 (.73)  
 Railway Age, No. 4, January 28, p. 239.  
 Air brake developments outlined. (4500 words.)

1928 621 .137 (.73) & 621 .138 (.73)  
 Railway Age, No. 4, January 28, p. 243.  
 ARMSTRONG (G. W.). — Measure of locomotive utilization. (2300 words, 3 tables & fig.)

1928 625 .144.4 (.73) & 625 .172 (.73)  
 Railway Age, No. 4, January 28, p. 247.  
 Unusual development in labor saving equipment. (1200 words & fig.)

### Railway Gazette & Railway News. (London.)

1928 656 .258 (.42)  
 Railway Gazette & News, No. 4, January 27, p. 98.  
 Interlocking of opening bridges. (1400 words & fig.)

1928 625 .254 (.42)  
 Railway Gazette & News, No. 4, January 27, p. 104.  
 Westinghouse « Prestall » vacuum brake apparatus. (1500 words & fig.)

1928 621 .132.8 (.54)  
 Railway Gazette & News, No. 4, January 27, p. 104.  
 Internal-combustion rail motor coaches for India. (1200 words & fig.)

1928 656 .1 (.42) & 656 .2 (.42)  
 Railway Gazette & News, No. 4, January 27, p. 111.  
 Railways and road transport powers. (2200 words)

1928 656 .22 (.42)  
 Railway Gazette & News, No. 4, January 27, p. 113.  
 Passenger train working. (800 words.)

1928 625 .1 (.8)  
 Railway Gazette & News, No. 4, January 27, p. 113.  
 Permanent way and works in South America. (800 words.)

### Railway Signaling. (New York.)

1928 656 .256.2 (.73)  
 Railway Signaling, February, p. 41.  
 Automatic interlocker on Chicago Great Western effects saving. (3200 words & fig.)

1928 656 .256.3 (.73)  
 Railway Signaling, February, p. 45.  
 Chicago, Burlington & Quincy completes automatic signals, Chicago to Denver. (5600 words, 3 tables & fig.)

1928 385. (071.3 (.73)  
 Railway Signaling, February, p. 52.  
 PFLASTERER (G. R.). — Educating signal maintenance employees. (3300 words & fig.)

1928 656 .256.3 (.73)  
 Railway Signaling, February, p. 58.  
 OPPELT (J. H.). — Nickel Plate installs 169 miles of color-light automatics. (2600 words & fig.)

### South African Railways and Harbours Magazine. (Johannesburg.)

1927 385. (09 (.73)  
 South African Rys. & Harbours Mag., Dec., p. 2055.  
 THOMPSON (W.). — A brief story of a great American railroad. The New York Central Lines. (2400 words & fig.)

1927 621 .33 (.49)  
 South African Rys. & Harbours Mag., Dec., p. 2064.  
 BOTHNER (C.). — The electrification of the railways in Switzerland. (2800 words & fig.)

1927 621 .33 (.49)  
 South African Rys. & Harbours Mag., Dec., p. 2039.  
 PILKINGTON (G. W.). — The evolution and art of the poster. (2300 words & fig.)

1927 385. (09 .1 (.93)  
 South African Rys. & Harbours Mag., Dec., p. 2087.  
 The Railways of New Zealand. (2000 words & fig.)



1927 385. (09 .1 (.68)  
South African Rys. & Harbours Mag., Dec., p. 2092.  
The Railways of Rhodesia. (2 300 words & fig.)

**In Italian.**

**Annali dei lavori pubblici. (Roma.)**

1927 62. (01  
Annali dei lavori pubblici, novembre, p. 1023.  
SUPINO (G.). — Sulla **stabilità** della forma piana  
di flessione e sulle formule di resistenza a flessione e  
torsione. (3 800 parole.)

1927 62. (01  
Annali dei lavori pubblici, novembre, p. 1041.  
BELLUZZI (O.). — I **portali**, semplici o multipli,  
incastriati. (2 000 parole & fig.)

1927 385 .1 (.43)  
Annali dei lavori pubblici, novembre, p. 1055.  
Le ferrovie germaniche. (3 400 parole.)

1927 385 .113 (.45)  
Annali dei lavori pubblici, novembre, p. 1061.  
Le **Ferrovie dello Stato** nell' ultimo quinquennio.  
(1 500 parole & tabelle.)

**Rivista tecnica delle ferrovie italiane. (Roma.)**

1928 621 .133.2 & 665 .882  
Rivista tecnica delle ferrovie italiane, 15 gennaio, p. 1.  
SACCOMANI (L.) & VERZILLO (R.). — La salda-  
tura ossiacetilenica nella riparazione dei forni di rame  
delle caldaie di locomotive. (5 900 parole, tabelle & fig.)

1928 625 .13 (.45)  
Rivista tecnica delle ferrovie italiane, 15 gennaio, p. 22.  
PARTANNI (S.). — Parziale **ricostruzione** della gal-  
leria della Mognatta e rafforzamento dei piedritti a  
valle di un tratto della galleria stessa. (1 300 parole  
& fig.)

**Rivista dei Trasporti. (Milano.)**

1927 621 .132.8 (.45) & 621 .43 (.45)  
Rivista dei Trasporti, dicembre, p. 246.  
NAGEL (C.). — **Automotrici** ferro-tramviarie con  
motore a scoppio. (4 600 parole & fig.)

1927 621 .33 (.45)  
Rivista dei Trasporti, dicembre, p. 252.  
ZIPPEL (G.). — **Elettrificazione** della linea a vapore  
Brescia-Orzinuovi delle Tranvie Elettriche Bresciane.  
(1 500 parole & fig.)

**In Dutch.**

**De Ingenieur. (Den Haag.)**

1928 669 .1  
De Ingenieur, n° 5, 4 Februari, p. W. 51.  
VAN DEN BERG (D.) & SCHOENMAKER (P.). —  
**Het uitgloeien van staal**. (5 200 woorden & fig.)

**De Locomotief. (Amsterdam.)**

1928 621 .35  
De Locomotief, n° 6, 8 Februari, p. 41.  
De Almeida-accumulator. (2 900 woorden.)

1928 625 .617 (.43)  
De Locomotief, n° 6, 8 Februari, p. 43.  
Algemeene voorwaarden voor de **montage van wagen-  
uitrustingen** in de werkplaatsen der fabrieken in  
Duitschland van 28 October 1927 af. (2 400 woorden.)

**In Portuguese.**

**Revista das Estradas de ferro. (Rio de Janeiro.)**

1928 624 .32 (.81)  
Revista das Estradas de ferro, n° 60, 15 de janeiro, p. 4.  
Estrada de Ferro Oeste de Minas. **Montagem da  
Ponte Raul Soares**. (800 palavras & fig.)



# MONTHLY BIBLIOGRAPHY OF RAILWAYS (1)

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## I. — BOOKS.

In French.			
1928	621 .88 (02)	1928	698
UDOT (E.).		MARGIVAL (François), Licencié ès-sciences.	
Guide pratique de mécanique, filetage et taillage à l'usage de tous les mécaniciens.		Détrempes et badigeons.	
Paris (6°), Desforges, Girardot & C <sup>ie</sup> , éditeurs, 27 et 29, quai des Grands-Augustins. 4 <sup>e</sup> édition. In-16 de 160 pages avec tables. (Prix : 8 francs.)		Paris (6°), Desforges, Girardot & C <sup>ie</sup> , éditeurs, 27 et 29, quai des Grands-Augustins. Un volume in-16 (19 × 12 cm.), de 160 pages avec fig. (Prix : 15 francs.)	
1928	621 .9 (02)	1928	698
AMPLY (R.), mécanicien-électricien.		MARGIVAL (François), Licencié ès-sciences.	
Nouvelle encyclopédie pratique des constructeurs, mécaniciens, électriciens, chaudronniers. Tome onzième : Machines-outils et outillage. (Première partie.)		Laques et vernis. Préparation et emploi.	
Paris (6°), 15, rue des Saints-Pères; Liège, 1, quai de la Grande-Bretagne, Librairie polytechnique Ch. Béranger. In-8° (12 × 18 cm.), de 228 pages, avec 414 figures dans le texte. (Prix net : 18 francs.)		Paris (6°), Desforges, Girardot & C <sup>ie</sup> , éditeurs, 27 et 29, quai des Grands-Augustins. Un volume in-16 (19 × 12 cm.) de 165 pages. (Prix : 16.50 francs.)	
1928	536. (02)	1928	698
BRY (Charles), membre de l'Institut, professeur à la Sorbonne.		MARGIVAL (François), Licencié ès-sciences.	
Éléments de thermodynamique.		Peintures.	
Paris (5°), Librairie Armand Colin, 103, boulevard Saint-Michel. Un volume in-16, 39 figures. (Prix : 2 francs.)		Paris (6°), Desforges, Girardot & C <sup>ie</sup> , éditeurs, 27 et 29, quai des Grands-Augustins. Un volume in-16 (19 × 12 cm.) de 230 pages. (Prix : 22.50 francs.)	
1928	621 .33 (.494)	1928	385 (.44)
ETTLER (Jean).		PAJOT-LACAZE (Robert).	
L'électrification des principales lignes des Chemins de fer fédéraux.		Le régime actuel des chemins de fer. Convention de 1921. Résultats jusqu'à 1927.	
Berne, Bolliger et Eicher, éditeurs, 33, Speichergasse. 44 pages, 44 fig. (Prix : 2 francs.)		Paris (14°), Editions et Publications contemporaines, 47, rue de la Gaîté. Un volume in-8° raisin. (Prix : 25 francs.)	
1928	621 .31 (.44)	1928	69 (02)
La houille blanche.		RAZOUS (P.).	
Bordeaux, Le Sud-Ouest économique, 6, place Saint-Eustache. N° 171 (spécial), du 29 février 1928. Un volume in-8° (27 × 21 1/2 cm.) de 368 pages & fig. (Prix : 25 francs.)		Procédés modernes de construction.	
		Paris, R. Ducher, In-8° (16.5 × 25.5 cm.) de 224 pages avec 105 fig.	
		1927	621 .13 (02)
		SAUVAGE (E.), ingénieur en chef honoraire des Chemins de fer de l'Etat français, professeur au Conservatoire national des Arts et Métiers.	
		La machine locomotive. Manuel pratique donnant la description des organes et du fonctionnement de la locomotive, à l'usage des mécaniciens et des chauffeurs.	
		Paris, 15, rue des Saints-Pères; Liège, 1, quai de la Grande-Bretagne, Librairie polytechnique Ch. Béranger. In-8° (13 × 19.5 cm.) de xvi + 398 pages, avec 332 fig.	

(1) The numbers placed over the title of each book are those of the decimal classification proposed by the Railway Congress conjointly with the Office Bibliographique International of Brussels. (See «Bibliographical Decimal Classification as applied to Railway Science», by WEISSFERNER in the number for November, 1897, of the *Bulletin of the International Railway Congress*, p. 1509).



In German.

1927 621 .392 & 665 .882  
BARDTKE, Oberregierungsrat a. D. Werkdirektor des Reichsbahn-Aussbesserungswerks Wittenberge.

Gemeinfassliche Darstellung der gesamten Schweiss-technik.

Berlin N. W. 7. V. D. I. Verlag, G. m. b. H. Din. A 5, viii-280 Seiten, 250 Abb. (Preis : geb. : 12.50 Rm.)

1928 624 .63 (02  
Brücken in Eisenbeton. Ein Leitfaden für Schule und Praxis. Band I : Platten- und Balkenbrücken.

Leipzig. Verlag von Johann Ambrosius Barth. 6. neubearbeitete Auflage. viii-223 Seiten mit 532 Textabb. (Preis : 12 Rm.)

1928 624 .2  
BUCHWALD (A.).

Die Einflüsse bewegter Lasten auf Brücken und das Problem der Radreibung.

Wien VI. Verlag von Gewerbliche Druck- und Verlagsanstalt. 58 Seiten, mit 7 Abb. (Preis : 7 Schillinge.)

1927 62. (01  
CLASS (J.).

Der Kugelschlaghärteprüfer.

Berlin. V. D. I. Verlag. 20 Seiten u. Tabellen.

1927 625 .24 (.43)

Die Güterwagen der Deutschen Reichsbahn, ihre Bauart, Bestellung und Verwendung und die gebräuchlichsten Lademasse.

Berlin. V. D. I. Verlag, G. m. b. H. Dritte verbesserte Auflage, herausgegeben im Auftrage des Reichsbahn-Zentralamts in Berlin. Din. A 5, 30 Seiten mit 64 Abb. (Preis : 1 Rm.)

1928 537. (02

EICHENWALD (A.), Professor.

Vorlesungen über Elektrizität.

Berlin. Verlagsbuchhandlung Julius Springer. viii-664 Seiten mit 640 Abb. (Preis : 36 Rm.)

1928 625 .1 (02

Elsners Taschenbuch für den bautechnischen Eisenbahndienst. Herausgegeben in Verbindung mit dem Verband der Beamten des gehobenen mittleren bautechnischen Eisenbahndienstes.

Leipzig. Verlag von Johann Ambrosius Barth. Kl. 8°, xx, 359 Seiten mit Abb. (Preis : 2.50 Rm.)

1927 621 .133.1 (02  
ESSICH (O. A.).

Die Oelfeuerungstechnik.

Berlin. Verlag von Julius Springer. 128 Seiten mit 253 Textabb. (Preis brosch. : 8 Rm.)

1928 624 .9  
GESTESCHI (Th.).

Hölzerne Dachkonstruktionen.

Berlin. W. 8. Verlag von Wilhelm Ernst. 245 Seiten mit 313 Abb. (Preis : 12.40 Rm.)

1928

GUTERMUTH (M. F.).

Die Dampfmaschine. Bearbeitet in Gemeinschaft mit A. Watzinger. In 3 Bänden. 1. Band : Allgemeiner Theorie, Berechnung u. Konstruktion. 2. Band : Angewandte Theorie, Berechnung u. Konstruktion. 3. Band : Untersuchung angesehener Maschinenanlagen.

Leipzig. Verlag von Johann Ambrosius Barth. 1. Band, xx, 992 Seiten mit 1230 Textfig. — 2. Band, (mit über 500 Textfig. und 68 lithogr. Tafeln) : 1. Teil, Textband, vi, 389 Seiten; 2. Teil, Tafelband, IV, 68 Tafeln. — 3. Band, v, 254 Seiten, mit über 300 Textfig., 31 Tabellen und 18 lithogr. Tafeln. (Preis geb. 300 Rm.)

1928

HEINRICH (A.).

Eisenbahnbetriebslehre. Ein Handbuch für Studierende und Lehrer des Eisenbahnwesens. Unter Mitwirkung von T. Manker, bearbeitet 1928.

Leipzig. Verlag von Johann Ambrosius Barth. 3. erweiterte Auflage. 8°, xix-532 Seiten, mit 1 Tafel Textabb. u. 13 Anlagen. (Preis : 15 Rm.)

1927

HENTZEN (L.).

Das Einheitsstellwerk.

Leipzig. Verlag von Johann Ambrosius Barth. 398 Seiten mit 455 Abb. u. 3 Tafeln. (Preis : 25 Rm.)

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GALERKIN (B.). — Contribution à la théorie des plaques continues. (800 mots & fig.)
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DANTIN (Ch.). — Le nouveau pont de la Tournelle, à Paris. (2 700 mots & fig.)
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L'augmentation de la puissance des locomotives du « Canadian Pacific Railway », par l'emploi de chaudières en acier au nickel. (1 000 mots, 2 tableaux & fig.)
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FRÉMONT (Ch.). — Le choix des méthodes d'essai pour la réception des aciers de constructions. (2 000 mots & fig.)
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MAUREL (J.). — Un puissant élévateur de wagons (500 mots & fig.)
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GODARD (T.). — Un pont moderne est un chef-d'œuvre de technique et d'élégance. (4 500 mots & fig.)
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MAUREL (J.). — Des wagons de 100 tonnes à chargement automatique. (500 mots & fig.)

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VINCENT. — Comparaison entre les traverses en bois, les traverses métalliques et les traverses en ciment armé. (9 000 mots & fig.)
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Nord. (6 500 mots & fig.)

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THOMAS. — Nouvelle méthode d'assèchement des  
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1928 625 .142.2 (.73) & 691 (.73)  
Bull. Amer. Ry. Eng. Ass<sup>on</sup>, February, p. 707.  
Report of Committee XVII—Wood preservation.  
(7 200 words, tables & fig.)

1928 625 .18 (.73)  
Bull. Amer. Ry. Eng. Ass<sup>on</sup>, February, p. 749.  
Report of Committee XI—Records and accounts.  
(55 000 words & fig.)

1928 625 .14. (01) (.73)  
Bull. Amer. Ry. Eng. Ass<sup>on</sup>, February, p. 925.  
Progress report of special Committee on stresses in  
railroad track. (700 words.)

1928 69 (.73) & 725 (.73)  
Bull. Amer. Ry. Eng. Ass<sup>on</sup>, February, p. 927.  
Report of Committee VI—Buildings. (22 000 words.)

**Electric Railway Journal. (New-York.)**

1928 313 : 621 .33  
Electric Railway Journal, No. 5, February 4, p. 191.  
Index numbers of electric railway construction costs.  
(700 words, 3 tables & fig.)

1928 614 .8 (.73)  
Electric Railway Journal, No. 5, February 4, p. 193.  
El Paso wins prize for precautions against accidents.  
(3 400 words & fig.)

1928 385 .113 (.494) & 621 .33 (.494)  
Electric Railway Journal, No. 5, February 4, p. 198.  
Electrical equipment of railways in Switzerland re-  
turns large profit. (1 900 words & fig.)

1928 621 .335 (.73) & 621 .338 (.73)  
Electric Railway Journal, No. 6, February 11, p. 23.  
SMITH (W. H.). — Single-phase equipment for New  
York, Westchester & Boston Railroad. (3 200 words  
& fig.)

1928 621 .336 (.73)  
Electric Railway Journal, No. 7, February 18, p. 27.  
SCOTT (A. G.). — Analyzing trolley line failure  
(600 words, 1 table & fig.)

1928 621 .33 (.73)  
Electric Railway Journal, No. 8, February 25, p. 31.  
GORDON (Ch.). — Service first is Milwaukee  
transportation slogan. (4 400 words & fig.)

1928 621 .332 (.73)  
Electric Railway Journal, No. 8, February 25, p. 31.  
HEALY (K. T.). — High-voltage A. C. system  
Italy. (750 words & fig.)

1928 621 .31 (.73)  
Electric Railway Journal, No. 9, March 3, p. 349.  
WHITLOW (G. S.). — Two automatic substations  
installed in Cuba. (1 600 words & fig.)

**Engineer. (London.)**

1928 621 .135. (01) (.42) & 656 .281 (.42)  
Engineer, No. 3760, February 3, p. 126.  
The Sevenoaks derailment. (8 000 words & fig.)

1928 621 .18 (.42)  
Engineer, No. 3760, February 3, p. 134.  
Extra-high-pressure steam engine at the Werks  
Works. (1 600 words & fig.)

1928 621 .18 (.42)  
Engineer, No. 3762, February 17, p. 177.  
Tests of a 12 000 kw. Zoelly steam turbine. (700 words  
& 2 tables & fig.)

1928 621 .132.6 (.42) & 621 .135. (01) (.42)  
Engineer, No. 3762, February 17, p. 178 et 186.  
Tank engines on express trains. (2 100 words, 5 tables  
& fig.)

1928 625 .4 (.42)  
Engineer, No. 3762, February 17, p. 181.  
Aerial ropeway at Carrara marble quarry. (1 000  
words & fig.)

1928 536 (.42)  
Engineer, No. 3762, February 17, p. 185.  
Steam research in America. (1 900 words.)

1928 621 .31 (.42)  
Engineer, No. 3762, February 17, p. 188.  
The Horseferry-road sub-station. (900 words & fig.)

# Engineering. (London.)

- 1928 624 .51  
Engineering, No. 3234, January 6, p. 1.  
The stiffening girder with variable moment of inertia. (2 000 words & 4 tables.)
- 1928 669 .1  
Engineering, No. 3234, January 6, p. 2.  
MULDER (I. R.). — Brittleness in chains links as affected by proofing and annealing. (2 400 words & fig.)
- 1928 624 .52 (.73)  
Engineering, No. 3234, January 6, p. 5.  
The erection of the Carquinez Strait bridge, California. (3 400 words, 1 table & fig.)
- 1928 621 .132.7 (.42) & 621 .4 (.42)  
Engineering, No. 3234, January 6, p. 8.  
Internal-combustion shunting locomotive. (1 100 words & fig.)
- 1928 621 .138.2 (.42)  
Engineering, No. 3234, January 6, p. 11.  
Coal-handling plant at the Stourport generating station. (3 000 words & fig.)
- 1928 621 .112 (.73) & 621 .165 (.73)  
Engineering, No. 3234, January 6, p. 25.  
ANDERSON (J.). — Operating experiences with 300-lb. steam pressure. (2 500 words, 5 tables & fig.)
- 1928 691  
Engineering, No. 3238, February 3, p. 121.  
Concrete in the field. (2 100 words.)
- 1928 38 (.61)  
Engineering, No. 3238, February 3, p. 130.  
Transport and North African trade development. (1 300 words.)
- 1928 621 .91 (.42)  
Engineering, No. 3238, February 3, p. 130.  
Six-roller high-speed planing and moulding machine for hardwoods. (1 600 words.)
- 1928 691  
Engineering, No. 3238, February 3, p. 131.  
DAVIES (V. C.). — Extensometer for the determination of Young's modulus for concrete. (6 300 words & fig.)
- 1928 621 .135. (01 (.42) & 656 .281 (.42)  
Engineering, No. 3238, February 3, p. 138.  
Sevenoaks railway accident. (1 200 words.)
- 1928 697  
Engineering, No. 3238, February 3, p. 139.  
Radiant heating. (1 100 words.)
- 1928 625 .253 (.42)  
Engineering, No. 3238, February 3, p. 145.  
The Prestall vacuum-brake cylinder. (600 words.)

- 1928 624 .8 (.71)  
Engineering, No. 3238, February 3, p. 151.  
SWAN (A. D.). — Railway and vehicular bridge across Vancouver harbour, B. C. (1 400 words.)
- 1928 627 (.71) & 656 .213 (.71)  
Engineering, No. 3240, February 17, p. 183.  
CUNNINGHAM (B.). — The Port of Quebec. (2 500 words & fig.)
- 1928 613 .66 (.42)  
Engineering, No. 3240, February 17, p. 185.  
Weight carrying in factories. (1 600 words.)
- 1928 62. (01)  
Engineering, No. 3240, February 17, p. 201.  
Fatigue phenomena. (1 900 words.)
- 1928 627 (.71) & 721 .1 (.71)  
Engineering, No. 3240, February 17, p. 202.  
WYNNE-EDWARDS (R. M.). — Reinforced-concrete piles in gravel fill at Vancouver, B. C. (800 words.)

## Engineering News-Record. (New-York.)

- 1928 62. (01 & 621 .88  
Engineering News-Record, No. 5, February 2, p. 188.  
YOUNG (C. R.). — Tensile working stress for rivets investigated. (1 300 words, 3 tables & fig.)
- 1928 627 (.73)  
Engineering News-Record, No. 5, February 2, p. 191.  
SPEIR (O.). — Building a penstock to develop a static head of 2 561 ft. (3 400 words & fig.)
- 1928 625 .13 (.73)  
Engineering News-Record, No. 5, February 2, p. 201.  
Concrete gun lining work in Duboce tunnel. (3 600 words & fig.)
- 1928 625 .13 (.73)  
Engineering News-Record, No. 6, February 9, p. 224.  
Traveling concrete plants line Cascade tunnel. (2 000 words & fig.)
- 1928 656 .211.7 (.73)  
Engineering News-Record, No. 6, February 9, p. 228.  
SMITH (S. M.). — Three-track car-ferry landing: Wabash Railway. (1 300 words & fig.)
- 1928 624. (0 (.73) & 669 .1 (.73)  
Engineering News-Record, No. 6, February 9, p. 231.  
MORRIS (H. T.). — Problems in fabricating silicon steel for Delaware bridge. (900 words.)
- 1928 69 (.73)  
Engineering News-Record, No. 6, February 9, p. 232.  
Reinforced-concrete wall moved 1 000 ft. (1 000 words & fig.)
- 1928 624. (0  
Engineering News-Record, No. 6, February 9, p. 235.  
BELL (N. J.) & GRANNIS (J. K.). — Stress analysis of 90-year-old wooden bridge. (1 500 words & fig.)

1928 691  
Engineering News-Record, No. 6, February 9, p. 236.  
Action of pure water on cement mortar briquets.  
(800 words & fig.)

1928 62. (01 & 621 .392  
Engineering News-Record, No. 6, February 9, p. 237.  
Tabulation of test data on unit strength of welded  
joints. (100 words & table.)

1928 62. (01  
Engineering News-Record, No. 6, February 9, p. 243.  
OSGOOD (W. R.). — Compressive stress on wood  
surfaces inclined to the grain. (800 words, 1 table &  
fig.)

1928 691  
Engineering News-Record, No. 7, February 16, p. 274.  
SNYDER (T. E.). — How to prevent termite damage  
to buildings. (2 100 words & fig.)

1928 624 .52 (.73)  
Engineering News-Record, No. 7, February 16, p. 282.  
MURRAY (R. M.). — Bridge 502 ft. above stream  
bed built in Idaho. (1 100 words & fig.)

1928 693 (.73)  
Engineering News-Record, No. 7, February 16, p. 285.  
BEVIER (P. H.). — Some practices in erecting damp-  
proof tile-and-brick walls. (1 000 words & fig.)

1928 625 .1 (.73)  
Engineering News-Record, No. 8, February 23, p. 304.  
Sixty-three-mile railway completed in ten months.  
(1 900 words & fig.)

1928 625 .176 (.73)  
Engineering News-Record, No. 8, February 23, p. 307.  
Broadgaging the Nevada-California-Oregon Railway.  
(600 words & fig.)

1928 625 .143.4 (.44)  
Engineering News-Record, No. 8, February 23, p. 309.  
A French three-point, rail joint and frogless frog.  
(500 words & fig.)

1928 625 .142.2 (.73) & 691 (.73)  
Engineering News-Record, No. 8, February 23, p. 310.  
Economics of treated ties on the Lackawanna Rail-  
road. (1 100 words.)

1928 656 .212 (.73)  
Engineering News-Record, No. 8, February 23, p. 317.  
Large terminal yard and transfer station. (3 500  
words, 2 tables & fig.)

1928 625 .144.4 (.73)  
Engineering News-Record, No. 8, February 23, p. 321.  
Tracklaying by contract on Santa Fe extension. (800  
words & fig.)

1928 625 .13 (.73)  
Engineering News-Record, No. 8, February 23, p. 322.  
BISSELL (A. G.). — Plate-girder railway bridge  
built by welding. (700 words & fig.)

1928 526 (.73) & 625 .11 (.73)  
Engineering News-Record, No. 8, February 23, p. 324.  
Improved methods used in surveys for extending  
Piedmont & Northern Railway. (2 000 words & fig.)

1928 625 .142.2 (.73) & 691 (.73)  
Engineering News-Record, No. 8, February 23, p. 327.  
Economy in framing timber and ties before tre-  
ment. (1 200 words & fig.)

1928 625 .19 (.73)  
Engineering News-Record, No. 8, February 23, p. 328.  
RUST (T. E.). — Motor truck and light cars used  
to dismantle 165-mile railway. (4 000 words & fig.)

## Great Western Railway Magazine. (London.)

1928 656 .1 & 656  
Great Western Railway Magazine, February, p. 55.  
Co-ordination of road and rail transport. (850 wo-  
rd & fig.)

1928 625 .245 (.73)  
Great Western Railway Magazine, February, p. 56.  
German high-capacity coal wagons. (1 200 words  
& fig.)

## Journal of the Institute of Transport. (London)

1928 656  
Journal of the Institute of Transport, February, p. 1.  
WYNDHAM SHIRE (L. G.). — The use and main-  
tenance of pneumatic tyres as applied to commercial  
vehicles. (18 500 words.)

1928 313 .385 (.42) & 656 .1 (.73)  
Journal of the Institute of Transport, February, p. 1.  
BELL (R.). — The lessons of our railway statistics.  
(8 000 words.)

1928 656 .1 (.73)  
Journal of the Institute of Transport, February, p. 1.  
DONALDSON WRIGHT (W.). — Organisation of  
transport of goods by road. (2 800 words.)

## Locomotive Railway Carriage & Wagon Review. (London.)

1928 621 .132.8 (.73)  
Loc. Ry. Carriage & Wag. Rev., No. 426, Febr. 15, p. 1.  
« Garratt-Union » articulated locomotive, South Af-  
rican Rys. (800 words & fig.)

1928 621 .132.8 (.73)  
Loc. Ry. Carriage & Wag. Rev., No. 426, Febr. 15, p. 1.  
Shefflex rail car, West Sussex Ry. (900 words & fig.)

1928 625 .254 (.73)  
Loc. Ry. Carriage & Wag. Rev., No. 426, Febr. 15, p. 1.  
New vacuum brake apparatus. The « Prestall »  
linder. (1 100 words & fig.)



1928 621 .94 (.42)  
e. Ry. Carriage & Wag. Rev., No. 426, Febr. 15, p. 48.  
Patent combined carriage wheel turning and grinding  
he. (1 400 words & fig.)

1928 621 .135.3 & 625 .213  
e. Ry. Carriage & Wag. Rev., No. 426, Febr. 15, p. 57.  
SANDERS (T. H.). — Coiled springs. Design and  
mulae. (2 400 words, tables & fig.)

1928 669 .1  
e. Ry. Carriage & Wag. Rev., No. 426, Febr. 15, p. 61.  
Special steels for locomotive parts. (1 000 words &  
)

1928 669  
e. Ry. Carriage & Wag. Rev., No. 426, Febr. 15, p. 65.  
Failures of locomotive parts and their causes. (1 400  
ords.)

### London & North Eastern Railway Magazine. (London.)

1928 625 .258 (.43) & 656 .259 (.43)  
& N. E. Railway Magazine, February, p. 53.  
« Rail brakes » for new « up » marshalling yard,  
arch. (500 words & fig.)

### Mechanical Engineering. (New-York).

1928 665 .882 & 669  
Mechanical Engineering, February, p. 133.  
ROCKEFELLER (H. E.). — Procedure control in  
essure-vessel welding. (3 000 words & fig.)

1928 62. (01 & 621 .18  
Mechanical Engineering, February, p. 137.  
MALCOLM (V. T.). — What is the limiting tem-  
perature in central-station operation? (4 200 words &  
)

1928 536 (.73)  
Mechanical Engineering, February, p. 151.  
Progress in steam-research. (6 000 words, 1 table &  
)

1928 621 .16  
Mechanical Engineering, February, p. 159.  
The reciprocating steam engine as a modern prime  
over. (3 800 words & fig.)

1928 621 .115  
Mechanical Engineering, February, p. 171.  
Geographical location of bad condenser-water condi-  
tions. (800 words & 4 tables.)

1928 62. (01 & 669 .1  
Mechanical Engineering, March, p. 205.  
LUCAS (F. F.). — Photomicrography and its appli-  
cation to mechanical engineering. (4 200 words & fig.)

1928 62. (01 & 669 .1  
Mechanical Engineering, March, p. 213.  
DAVEY (W. P.). — X-ray examination of structural  
materials. (3 800 words & fig.)

### Modern Transport. (London.)

1928 625 .4 (.42)  
Modern Transport, No. 465, February 11, p. 3.  
Completion of the Post Office (London) tube rail-  
way. (9 300 words & fig.)

1928 656 .25 (.42)  
Modern Transport, No. 465, February 11, p. 11.  
EVERY (W. S.). — Developments in British rail-  
way signalling. (1 300 words & fig.)

1928 656 .1 (.44) & 656 .2 (.44)  
Modern Transport, No. 467, February 25, p. 2.  
Railway road services in France. (2 400 words & fig.)

1928 385 .11 (.54)  
Modern Transport, No. 467, February 25, p. 5.  
Transport in India. Progress in new construction and  
standardisation. (2 300 words.)

1928 656 .1 (.42) & 656 .2 (.42)  
Modern Transport, No. 467, February 25, p. 16.  
Railway Companies and road transport. (2 000 words.)

### Proceedings, American Society of Civil Engineers. (New-York.)

1928 347 .75  
Proceed., Amer. Soc. Civil Eng., February, p. 395.  
CHRISTIE (W. P.). — General contract system ver-  
sus segregated contracts. (4 700 words.)

1928 624 .6 & 721 .4  
Proceed., Amer. Soc. Civil Eng., February, p. 485.  
RATHBUN (J. Ch.). — Crown stresses in a skew  
arch. (5 500 words, 6 tables & fig.)

### Railway Age. (New-York.)

1928 625 .258 (.73) & 656 .259 (.73)  
Railway Age, No. 5, February 4, p. 295.  
Car retarders at Mechanicville. (2 500 words & fig.)

1928 385 .21 (.73)  
Railway Age, No. 5, February 4, p. 299.  
DOWNS (L. A.). — Railway service endangered by  
rate reductions. (2 200 words.)

1928 656 .212.6 (.73)  
Railway Age, No. 5, February 4, p. 301.  
Freight transfer operation aided by tonnage system.  
(2 300 words & fig.)

1928 625 .142.2 (.73) & 691 (.73)  
Railway Age, No. 5, February 4, p. 305.  
Scope of railway timber treatment extending. (5 600  
words, 1 table & fig.)

1928 656 .257  
Railway Age, No. 5, February 4, p. 315.  
SANGSTER (A.). — Practical methods in cost stu-  
dies. (4 200 words.)

1928 625 .245 (.73)  
 Railway Age, No. 5, February 4, p. 318.  
 Bureau of Mines instruction car. (700 words & fig.)

1928 621 .132.7 (.73)  
 Railway Age, No. 5, February 4, p. 325.  
 Eight-wheel switchers for Boston & Maine. (900 words & fig.)

1928 656 .212.5 (.73)  
 Railway Age, No. 6, February 11, p. 345.  
 How a complex yard problem has been solved. (3700 words & fig.)

1928 625 .143.2 (.43)  
 Railway Age, No. 6, February 11, p. 355.  
 GENNET (C. W.). — The manufacture of foreign rails. (2000 words, tables & fig.)

1928 656 .253 (.73) & 656 .255 (.73)  
 Railway Age, No. 6, February 11, p. 361.  
 LEROY WYANT. — Rock Island increases track capacity by either-direction signaling. (2200 words & fig.)

1928 621 .138.2 (.73)  
 Railway Age, No. 6, February 11, p. 370.  
 A fuel station for lignite. (600 words & fig.)

1928 656 .215 (.73)  
 Railway Age, No. 7, February 18, p. 393.  
 Yard operations made safer by floodlighting. (1700 words & fig.)

1928 656 .212.6 (.73)  
 Railway Age, No. 7, February 18, p. 396.  
 Canadian Pacific puts supply work on wheels. (3600 words & fig.)

1928 656 .213 (.73)  
 Railway Age, No. 7, February 18, p. 399.  
 Coal terminal renders unusual service. (3100 words & fig.)

1928 625 .13 (.73)  
 Railway Age, No. 7, February 18, p. 403.  
 Will Moffat's dream be realized? (2100 words & fig.)

1928 625 .245 (.73)  
 Railway Age, No. 7, February 18, p. 406.  
 An iceless refrigerator car. (1800 words & fig.)

1928 656 .211.4 (.73)  
 Railway Age, No. 7, February 18, p. 409.  
 Cincinnati to have Union Station. (1800 words & fig.)

1928 385 .11 (.73)  
 Railway Age, No. 7, February 18, p. 411.  
 Has growth of facilities kept pace with traffic? (1900 words & fig.)

1928 656 .258 (.73)  
 Railway Age, No. 7, February 18, p. 417.  
 Automatic interlocker effects saving. (800 words & fig.)

1928 625 .245 & 656 .2  
 Railway Age, No. 7, February 18, p. 419.  
 ALLEN (B.). — The case for the container. (2 words:)

1928 725 .33 (.7  
 Railway Age, No. 8, February 25, p. 438.  
 New shop facilities embody many distinctive features (3100 words & fig.)

1928 656 .233 (.7  
 Railway Age, No. 8, February 25, p. 443.  
 DAKIN (E. T.). — Pooling of passenger train (1500 words & fig.)

1928 621 .336 (.7  
 Railway Age, No. 8, February 25, p. 445.  
 WRIGHT (A. M.). — Overhead construction on Great Northern. (2400 words & fig.)

1928 385 .114 (.7  
 Railway Age, No. 8, February 25, p. 449.  
 Train-miles and train-hours decrease. (1900 words & fig.)

1928 621 .132.3 (.73) & 621 .132.5 (.7  
 Railway Age, No. 8, February 25, p. 452.  
 New Haven acquires ten three-cylinder locomotives (1300 words, 1 table & fig.)

1928 656 .254 (.7  
 Railway Age, No. 8, February 25, p. 457.  
 Trains directed by signals. (1700 words & fig.)

1928 625 .162 (.7  
 Railway Age, No. 9, March 3, p. 512.  
 BLAKE (H. D.). — How Wisconsin is solving the grade crossing problem. (5500 words & fig.)

1928 625 .245 (.7  
 Railway Age, No. 9, March 3, p. 517.  
 Seventy-ton gondola for Chicago & Illinois Midland (900 words & fig.)

1928 656 .212.9 (.7  
 Railway Age, No. 9, March 3, p. 518.  
 « Graphic » cases reduce car delays. (1200 words & fig.)

1928 621 .335 (.73) & 621 .4 (.7  
 Railway Age, No. 9, March 3, p. 525.  
 Battery-oil-electric locomotive. (2200 words & fig.)

1928 621 .132.3 (.73) & 621 .132.7 (.7  
 Railway Age, No. 9, March 3, p. 540.  
 Passenger and switching locomotives for the Central Railroad of New Jersey. (1900 words, 1 table & fig.)

1928 621 .8 (.7  
 Railway Age, No. 10, March 10, p. 565.  
 New bridge replaces car ferry on the Maine Central (4900 words & fig.)

1928 656 .2 (.71)  
 Railway Age, No. 10, March 10, p. 570.  
 Moving the Canadian grain crop. (3 500 words, 2 tables & fig.)

1928 621 .133. (01)  
 Railway Age, No. 10, March 10, p. 575.  
 BRANDT (C. A.). — The design and proportion of locomotive boilers. (4 600 words & fig.)

1928 621 .139 (.73), 625 .18 (.73) & 625 .27 (.73)  
 Railway Age, No. 10, March 10, p. 580.  
 MOREHEAD (W. S.). — Illinois Central improves material handling. (2 600 words & fig.)

1928 625 .245 (.73)  
 Railway Age, No. 10, March 10, p. 585.  
 A 65-ft. car for steel loading. (1 500 words & fig.)

1928 656 .255 (.73)  
 Railway Age, No. 10, March 10, p. 587.  
 Illinois Central increased capacity of double track by other-direction signals. (1 900 words & fig.)

Railway Engineer. (London.)

1928 625 .17 (.42), 656 .212.5 (.42) & 725 .33 (.42)  
 Railway Engineer, February, p. 45.  
 Reconstruction of a large railway engineering depot. (800 words & fig.)

1928 656 .25 (06)  
 Railway Engineer, February, p. 53.  
 Automatic and power signalling economics. (650 words.)

1928 621 .2 (.42) & 621 .98 (.42)  
 Railway Engineer, February, p. 54.  
 Vertical plate-bending machine of the hydraulic type. (800 words & fig.)

1928 621 .132.3 (.54)  
 Railway Engineer, February, p. 56.  
 New Pacific type locomotives for Indian Railways. (550 words & fig.)

1928 621 .132.8 (.81)  
 Railway Engineer, February, p. 61.  
 Garratt locomotives for San Paulo (Brazilian) Railway. (500 words & fig.)

1928 621 .31 (.42) & 656 .25 (.42)  
 Railway Engineer, February, p. 62.  
 Metal rectifiers for signalling. (1 000 words & fig.)

1928 625 .142.4 (.42)  
 Railway Engineer, February, p. 65.  
 Reinforced concrete sleepers on the London & North Eastern Ry. (800 words & fig.)

1928 621 .132.3 (.42)  
 Railway Engineer, February, p. 66.  
 New 4-4-0 type express locomotives, London & North Eastern Ry. (700 words & fig.)

1928 624 (.94)  
 Railway Engineer, February, p. 69.  
 Katherine River bridge, Australian Commonwealth Rys. (750 words & fig.)

1928 621 .133.2 (.73) & 621 .133.3 (.73)  
 Railway Engineer, February, p. 71.  
 Water-tube locomotive fireboxes in the United States of America. (2 000 words & fig.)

1928 625 .1 (.82) & 656 .25 (.82)  
 Railway Engineer, February, p. 75.  
 Permanent way & signalling, Buenos Ayres Western Ry. (1 600 words & fig.)

1928 656 .283 (.42)  
 Railway Engineer, February, p. 48.  
 Railway accident report. Penistone, London & North Eastern : February 27, 1927. (700 words & fig.)

1928 625 .1 (.67)  
 Railway Engineer, March, p. 85.  
 Permanent way and works, Kenya & Uganda Ry. (1 700 words & fig.)

1928 621 .132.6 (.42)  
 Railway Engineer, March, p. 91.  
 New superheated tank engines for the London Midland & Scottish Ry. (500 words & fig.)

1928 625 .254 (.42)  
 Railway Engineer, March, p. 94.  
 Westinghouse « Prestall » vacuum brake apparatus. (1 600 words & fig.)

1928 621 .134.3 (.42)  
 Railway Engineer, March, p. 95.  
 Tests of locomotive fitted with Caprotti valve gear. (700 words, 1 table & fig.)

1928 621 .132.8 (.68)  
 Railway Engineer, March, p. 98.  
 New articulated locomotives for South Africa. (300 words & fig.)

1928 621 .9 (.42)  
 Railway Engineer, March, p. 105.  
 Machinery firebox stay bolts on hexagon turret lathes. (500 words & fig.)

1928 625 .245 (.82)  
 Railway Engineer, March, p. 106.  
 A new dynamometer car for Argentina. (1 600 words & fig.)

1928 625 .26 (.42)  
 Railway Engineer, April, p. 121.  
 A progressive system of railway wagon building. (5 500 words & fig.)

1928 625 .245 (.42)  
 Railway Engineer, April, p. 132.  
 Special bogie freight wagons, Southern Ry. (350 words & fig.)



1928 621 .95 (.42)  
 Railway Engineer, April, p. 132.  
 New 12-spindle gang drilling machine. (850 words & fig.)

1928 621 .335 (.54)  
 Railway Engineer, April, p. 137.  
 Electric express locomotive, Great Indian Peninsula Ry. (400 words.)

1928 621 .335 (.44)  
 Railway Engineer, April, p. 138.  
 5 400-H. P. electric locomotives, Paris, Lyons & Mediterranean Ry. (550 words & fig.)

1928 621 .135. (01 & 625 .14 (01  
 Railway Engineer, April, p. 139.  
 DENDY MARSHALL (C. F.). — Some lessons of the Sevenoaks accident. (2 200 words.)

1928 625 .232 (.62)  
 Railway Engineer, April, p. 142.  
 First-class corridor carriages, Egyptian State Rys. (350 words & fig.)

1928 621 .33 (.42) & 625 .4 (.42)  
 Railway Engineer, April, p. 145.  
 The Post Office tube railway. (2 800 words & fig.)

#### Railway Engineering & Maintenance. (Chicago.)

1928 656 .284 (.73)  
 Railway Engineering & Maintenance, February, p. 46.  
 New England railroads restore flood-wrecked lines to service. (3 900 words & fig.)

1928 621 .133.7 (.73) & 725 .33 (.73)  
 Railway Engineering & Maintenance, February, p. 51.  
 KORNFIELD (F. H.). — Louisville & Nashville meets problem of greater water supply. (2 900 words & fig.)

1928 625 .142.2. (06 (.73) & 691. (06 (.73)  
 Railway Engineering & Maintenance, February, p. 55.  
 « Users » Day stimulates interest in Wood Preservers' Convention. (2 600 words.)

1928 625 .142.2 (.73) & 691 (.73)  
 Railway Engineering & Maintenance, February, p. 57.  
 STIMSON (E.). — Framing structural timbers before treatment. (2 200 words.)

1928 625 .142.2 (.73) & 691 (.73)  
 Railway Engineering & Maintenance, February, p. 59.  
 RAY (G. J.). — Care of ties pays large returns on the Lackawanna. (3 300 words, 1 table & fig.)

1928 625 .113  
 Railway Engineering & Maintenance, February, p. 62.  
 BARTLETT (C. H.). — How to measure a curve for string lining. (4 300 words & fig.)

1928 625 .164 (.71)  
 Railway Engineering & Maintenance, February, p. 67.  
 Building snow fences of trees. (1 400 words & fig.)

1928 385 .3 (.73) & 625 .17 (.73)  
 Railway Engineering & Maintenance, February, p. 94.  
 Condemns contracting of track work by force account (2 000 words & tables.)

1928 625 .144.4 (.73) & 625 .17 (.73)  
 Railway Engineering & Maintenance, March, p. 94.  
 COOK (C. C.). — Getting the most out of wheeling equipment. (3 600 words & fig.)

1928 625 .144.4 (.73)  
 Railway Engineering & Maintenance, March, p. 98.  
 What are the undeveloped fields in labor saving? (2 300 words & fig.)

1928 625 .1 (0 (.73)  
 Railway Engineering & Maintenance, March, p. 103.  
 Cutting the labor expense on the Lackawanna. (3 600 words & fig.)

1928 625 .172 (.73)  
 Railway Engineering & Maintenance, March, p. 117.  
 Southern Pacific eradicates weeds. (1 800 words & fig.)

1928 625 .144.4 (.73)  
 Railway Engineering & Maintenance, March, p. 119.  
 PHILLIPS (G. A.). — How about the section gang? (1 500 words & fig.)

#### Railway Gazette. (London.)

1928 621 .87 (.46)  
 Railway Gazette, No. 5, February 3, p. 130.  
 Removal and replacement of locomotive wheels. (3 600 words & fig.)

1928 621 .135.2 (.44) & 625 .215 (.44)  
 Railway Gazette, No. 5, February 3, p. 134.  
 New type of axle-box for railway rolling-stock. (1 100 words & fig.)

1928 385. (09 .1 (.73)  
 Railway Gazette, No. 5, February 3, p. 136.  
 The Railways of Iraq. (3 200 words & fig.)

1928 621 .13  
 Railway Gazette, No. 5, February 3, p. 145.  
 « The Booster. » (1 300 words.)

1928 621 .135. (01 & 656 .281 (.44)  
 Railway Gazette, No. 5, February 3, p. 147.  
 Railway accident report. Sevenoaks, Southern : August 24, 1927. (4 500 words.)

1928 614 .8 & 656 .22  
 Railway Gazette, No. 6, February 10, p. 162.  
 Speed and safety on railways. (1 200 words.)

1928 385. (08 (.44)  
 Railway Gazette, No. 6, February 10, p. 163.  
 German Railways in 1927. (1 100 words & 2 tables.)

1928	625 .4 (.42)
Railway Gazette, No. 6, February 10, p. 165.	
The Post Office tube railway. (2 600 words & fig.)	
1928	621 .132.6 (.42)
Railway Gazette, No. 6, February 10, p. 175.	
New tank locomotives, London Midland & Scottish Ry. (350 words & fig.)	
1928	621 .132.8 (.68)
Railway Gazette, No. 6, February 10, p. 176.	
New articulated locomotives for South African Railways. (350 words & fig.)	
1928	656 .257 (.42)
Railway Gazette, No. 7, February 17, p. 197.	
Wire-worked points, Midland division, London Midland & Scottish Railway. (1 400 words & fig.)	
1928	656 .1 (.68) & 656 .2 (.68)
Railway Gazette, No. 7, February 17, p. 199.	
Railways and road transport section. (500 words.)	
1928	656 .1 & 656 .2
Railway Gazette, No. 7, February 17, p. 200.	
Road and rail co-ordination. (2 000 words.)	
1928	656 .1 (.42) & 656 .2 (.42)
Railway Gazette, No. 7, February 17, p. 202.	
FREE (B.). — Organization of the Great Western Railway road transport department. (4 300 words & fig.)	
1928	621 .132.6 (.91)
Railway Gazette, No. 7, February 17, p. 207.	
New tank engines, Federated Malay States Railways. (1 000 words & fig.)	
1928	625 .245 (.42)
Railway Gazette, No. 8, February 24, p. 230.	
Special bogie freight wagons, Southern Railway. (60 words & fig.)	
1928	621 .95 (.42)
Railway Gazette, No. 8, February 24, p. 231.	
A new tyre drilling and countersinking machine. (500 words & fig.)	
1928	51. (08 (.42) & 652 (.42)
Railway Gazette, No. 8, February 24, p. 234.	
SMITH (J. P.). — Mechanical audit and analysis of daily cash transactions. (1 100 words & fig.)	
1928	621 .335 (.42)
Railway Gazette, No. 8, February 24, p. 239.	
A new electric battery locomotive. (500 words & fig.)	
1928	656 .212.5 (.42)
Railway Gazette, No. 8, February 24, p. 245.	
New marshalling yard at March, London & North Eastern Ry. (300 words & fig.)	

## Railway Magazine. (London.)

1928	656 .211 (.82)
Railway Magazine, March, p. 171.	
STONES (H. R.). — A notable railway station in Buenos Aires. Retiro Terminus. Central Argentine Ry. (3 200 words & fig.)	
1928	621 .33 (.44)
Railway Magazine, March, p. 185.	
RICH (Th.). — Heavy electric traction in France. (1 600 words & fig.)	
1928	625 .245 (.42) & 656 .261 (.42)
Railway Magazine, March, p. 199.	
Railhead distribution for industrial products. (3 200 words & fig.)	
1928	656 .222.1 (.42)
Railway Magazine, March, p. 209.	
ALLEN (C. J.). — British locomotive practice and performance. (7 200 words, tables & fig.)	

## Railway Mechanical Engineer. (New York.)

1928	621 .131.2 & 621 .133.3
Railway Mechanical Engineer, February, p. 68.	
REHFUSS (L. A.). — Proposed high pressure water-tube boiler. (3 900 words & fig.)	
1928	385 .3 (08 (.73)
Railway Mechanical Engineer, February, p. 73.	
Bureau of locomotive inspection annual report. (1 300 words, 1 table & fig.)	
1928	313 .621.13 (.73)
Railway Mechanical Engineer, February, p. 76.	
Locomotive and motor car orders in 1927. (2 600 words, 9 tables & fig.)	
1928	621 .131.2 & 621 .43
Railway Mechanical Engineer, February, p. 79.	
HILDEBRAND (R.). — Diesel engines for locomotives. (2 000 words & fig.)	
1928	625 .236 (.73)
Railway Mechanical Engineer, February, p. 85.	
STEVENS (F. W.). — Cleaning passenger car equipment. (3 100 words & fig.)	
1928	625 .246 (.73) & 625 .26 (.73)
Railway Mechanical Engineer, February, p. 89.	
Rebuilding redesigned box cars on the New Haven. (2 700 words & fig.)	
1928	621 .134.1 (.73)
Railway Mechanical Engineer, February, p. 87.	
CONNORS (P. J.). — Method of locating eccentric crank arms. (700 words & fig.)	
1928	669 .1
Railway Mechanical Engineer, February, p. 99.	
HALER (P. J.). — Quenching. A practical study of rapid cooling. (3 600 words, tables & fig.)	

1928 621 .133.2 & 621 .9  
Railway Mechanical Engineer, February, p. 104.  
Staybolt production in railway shops. (3 800 words,  
1 table & fig.)

1928 621 .335 (.73) & 725 .33 (.73)  
Railway Mechanical Engineer, February, p. 109.  
McLANAHAN (A.). — Electric locomotive maintenance. (2 200 words & fig.)

1928 621 .132.3 (.73) & 621 .132.5 (.73)  
Railway Mechanical Engineer, March, p. 129.  
Three-cylinder locomotives for the New Haven. (1 200 words, 1 table & fig.)

1928 621 .133.3 & 669 .1  
Railway Mechanical Engineer, March, p. 132.  
WILLIAMS (F. H.). — Firebox plate failures. (2 600 words & fig.)

1928 621 .132.7 (.73)  
Railway Mechanical Engineer, March, p. 140.  
Boston & Maine buys ten eight wheel switchers. (800 words, 1 table & fig.)

1928 625 .236 (.73)  
Railway Mechanical Engineer, March, p. 142.  
Passenger car washing machine. (600 words & fig.)

1928 625 .26 (.73)  
Railway Mechanical Engineer, March, p. 145.  
Passenger chop work organized. (3 200 words, 3 tables & fig.)

1928 625 .244 (.73)  
Railway Mechanical Engineer, March, p. 152.  
An iceless refrigerator car. (1 900 words & fig.)

1928 621 .138.5 (.73)  
Railway Mechanical Engineer, March, p. 158.  
Spot system of locomotive repairs. (3 200 words & fig.)

#### Railway Signaling. (Chicago.)

1928 656 .258 (.73)  
Railway Signaling, March, p. 79.  
PORTER (L. B.). — Automatic interlockers are profitable investments. (4 000 words & fig.)

1928 625 .258 (.73) & 656 .259 (.73)  
Railway Signaling, March, p. 85.  
Boston & Maine installs new type General Railway Signal car retarders. (2 500 words & fig.)

1928 656 .25 (0) (.73)  
Railway Signaling, March, p. 90.  
Signal maintenance on the Frisco. (2 900 words, tables & fig.)

1928 656 .25 (.73)  
Railway Signaling, March, p. 94.  
New Haven installs modern signaling. (1 400 words & fig.)

1928 656 .256 (.73)  
Railway Signaling, March, p. 95.  
JOHNSON (J. A.). — Track circuits without bonding. (1 000 words, 1 table & fig.)

1928 656 .253 (.73)  
Railway Signaling, March, p. 97.  
CHRISTOFFERSON (C. A.). — Northern Pacific installs color-light signals. (1 400 words & fig.)

1928 656 .25 (.73)  
Railway Signaling, March, p. 101.  
Southern Pacific extends signals in Texas and Louisiana. (2 000 words & fig.)

#### In Spanish.

#### Boletín de Obras Públicas de la República Argentina. (Buenos Aires.)

1928 624 .1 (.8)  
Boletín de Obras Públicas, enero-febrero, p. 87.  
Puente ferroviario-carretero sobre el Río Negro. Descripción de los trabajos en ejecución. (1 500 palabras & fig.)

#### Gaceta de los Caminos de hierro. (Madrid.)

1928 385 .1 (.4)  
Gaceta de los Caminos de hierro, n° 3538, 1° de feb., p. 4.  
Los ferrocarriles franceses en la actualidad y las causas de su situación anormal. (1 300 palabras.)

1928 621 .1  
Gaceta de los Caminos de hierro, n° 3539, 10 de feb., p. 4.  
Importancia de la lubricación en los ferrocarriles. (700 palabras.)

1928 625 .142  
Gaceta de los Caminos de hierro, n° 3541, 1° de marzo, p. 4.  
Empleo del hormigón armado en las traviesas del ferrocarril. (1 100 palabras.)

1928 621 .1  
Gaceta de los Caminos de hierro, n° 3540, 20 de feb., p. 4.  
Lubricación a grandes velocidades. (1 100 palabras.)

#### Ingeniería y Construcción. (Madrid.)

1928 725 .43 (.46)  
Ingeniería y Construcción, n° 63, marzo, p. 126.  
La construcción de locomotoras en España. (11 000 palabras, 1 cuadro y fig.)

#### Revista de Obras Públicas. (Madrid.)

1928 385 .07 .1 (.44 + .46)  
Revista de Obras Públicas, n° 3, 1° de febrero, p. 48.  
La enseñanza de ferrocarriles en España y Francia. (1 700 palabras.)

1928 621 .33 (.46)  
Revista de Obras Públicas, n° 3, 1° de febrero, p. 50.  
Electrificación de líneas ferroviarias. (1 000 palabras.)



1928 621 .33 (.460)  
 Revista de Obras Publicas, n° 5, 1° de marzo, p. 79.  
 FUSTER (J. M.). — La electrificación del ferrocarril transpirenaico de Ripoll a Puigcerdá. (2 400 palabras y fig.)

**In Italian.**

Rivista delle Comunicazioni ferroviarie. (Roma.)

1928 656 .1 & 656 .2  
 Riv. delle Comunic. ferrov., n° 3, 1° febbraio, p. 15.  
 Via ferrata e strada ordinaria. (1 750 parole.)

1928 665 .882  
 Riv. delle Comunic. ferrov., n° 4, 15 febbraio, p. 15.  
 Un mezzo per migliorare l'utilizzazione delle locomotive. La soldatura ossiacetilenica per i forni di rame. (1 300 parole, 1 tabella & fig.)

1928 659  
 Riv. delle Comunic. ferrov., n° 5, 1° marzo, p. 13.  
 MALTESE (S.). — La propaganda ferroviaria. Le nostre agenzie commerciali. (3 600 parole.)

1928 656 .223.2  
 Riv. delle Comunic. ferrov., n° 5, 1° marzo, p. 17.  
 Gli accordi internazionali per lo scambio del materiale rotabile. L'unità tecnica delle ferrovie sino al 1899. (2 000 parole.)

**Rivista dei Trasporti. (Milano.)**

1928 625 .245  
 Rivista dei trasporti, febbraio-marzo, p. 22.  
 Il carro dinamometrico sistema Amsler ed i suoi ultimi perfezionamenti. (10 000 parole & fig.)

1928 385. (09 .1 (.45)  
 Rivista dei trasporti, febbraio-marzo, p. 32.  
 ALBRICCI (E.). — Lo sviluppo delle Ferrovie Nord-Milano. (4 500 parole & fig.)

1928 385 .1  
 Rivista dei trasporti, febbraio-marzo, p. 38.  
 Prospettive economiche sulle ferrovie. (5 000 parole & 4 tavole.)

**In Dutch.**

**De Ingenieur. (Den Haag.)**

1928 621 .133.1 (.43)  
 De Ingenieur, n° 9, 3 Maart, p. W. 97.  
 Proeven van de Duitsche Rijksspoorwegen met kolen-voerende locomotieven. (600 woorden & fig.)

1928 624 .2  
 De Ingenieur, n° 10, 10 Maart, p. B. 69.  
 BIJLAARD (P. P.). — Het verminderen van de blijvende doorbuiging van eenige statisch onbepaalde vakwerkbruggen in het lijngedeelte Padalarang-Poerwarta. (3 400 woorden & fig.)

1928 621 .335 (.92)  
 De Ingenieur, n° 11, 17 Maart, p. V. 29.  
 BIJLEVELD (R. Th.). — De motorrijtuigen van de E. S. S. in Nederlandsch-Indie. (6 800 woorden & fig.)

1928 624 .8 (01  
 De Ingenieur, n° 12, 24 Maart, p. B. 77.  
 FRANX (C.). — De berekening van ophaalbruggen. (2 100 woorden. 1 tabel & fig.)

1928 624 .6  
 De Ingenieur, n° 12, 24 Maart, p. B. 80.  
 EMPERGER (F.). — Boogbruggen met laag gelegen rijvloer. (1 500 woorden & fig.)

**De Locomotief. (Amsterdam.)**

1928 621 .134.5  
 De Locomotief, n° 8, 22 Februari, p. 60.  
 Het Buclon-smeerapparaat. (1 100 woorden.)

1928 621 .92  
 De Locomotief, n° 11, 14 Maart, p. 83.  
 Een practische slijpmachine. (800 woorden & fig.)

1928 625 .143.2  
 De Locomotief, n° 14, 4 April, p. 105.

Onderzoek van de S. T. C. R. P. naar de keuze van een staalsoort, welke geschikt is voor tramwegrails en goed bestand is tegen slijtage in het algemeen en golf-slijtage in het bijzonder. (5 000 woorden & 3 tabellen.)

**In Portuguese.**

**Gazeta dos Caminhos de ferro. (Lisboa.)**

1928 385. (09 (.460)  
 Gazeta dos caminhos de ferro, n° 964, 16 de fev., p. 49.  
 DE SOUZA (J. F.). — Os resultados do novo regime ferroviario de Espanha. (2 000 palavras.)

1928 627 (.469)  
 Gazeta dos caminhos de ferro, n° 965, 1 de março, p. 70.  
 ESTEVES DOS SANTOS (R.). — Os melhoramentos do porto de Lisboa e a gare marítima. (7 500 palavras & fig.)

**Revista das Estradas de ferro. (Rio de Janeiro.)**

1928 669 .1 & 624. (0  
 Revista das Estradas de ferro, n° 62, 15 de fev., p. 71.  
 COSTA (O. M. da). — Os aços especiaes na construção das pontes para estradas de ferro e de rodagem. (3 700 palavras, cuadros & fig.)

1928 624 .5 (.81)  
 Revista das Estradas de ferro, n° 63, 29 de fev., p. 91.  
 COSTA (O. M. da). — A ponte Hercilio Luz. (5 000 palavras, 1 cuadro & fig.)

1928 385 .13 & 385 .15  
 Revista das Estradas de ferro, n° 64, 15 de março, p. 122.  
 LINS (A.). — A concessão e o trafico das estradas de ferro. (13 000 palavras.)



# MONTHLY BIBLIOGRAPHY OF RAILWAYS <sup>(1)</sup>

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## I. — BOOKS.

In French.		In German.
1928 691 LOMEY (J.), ingénieur, professeur à l'Université de Lausanne. Durcissement des mortiers et bétons. Lausanne, Librairie F. Rouge. In-4°, avec 12 fig. Prix : 2 francs suisses.)		1927 621 .116 GUMZ (W.), Dipl.-Ing. Die Luftvorwärmung im Dampfkesselbetrieb. Monograph. z. Feuerungstechn. Band 9. Leipzig, Verlag von Otto Spamer. In-8°, 179 Seiten mit 89 Abb., 2 Tafeln und 16 Zahlentafeln. (Preis geh.: 10 Rm.)
1928 621 .94 (02 LANCHE (G.), ingénieur A. et M. et E. C. P. Manuel de l'ouvrier mécanicien. Volume IX : Tour. Paris (6°), Gauthier-Villars & C <sup>ie</sup> , imprimeurs-éditeurs, 55, quai des Grands-Augustins. In-16 de 246 pages Formulaire de l'ouvrier mécanicien, Calculs d'atelier. Prix : 15 francs.)		1928 621 .116. (02 HERBERG (Georg), Dr.-Ing. Handbuch der Feuerungstechnik und des Dampfkesselbetriebes unter besonderer Berücksichtigung der Wärmewirtschaft. Berlin, Verlag von Julius Springer. Vierte, erweiterte Auflage, xii-447 Seiten mit 84 Textabbildungen, 118 Zahlentafeln sowie 54 Rechnungsbeispielen. (Preis geb.: 23.50 Rm.)
1928 721 .9 (01 IDI (C.), professeur. Études expérimentales sur les constructions en béton armé. Lausanne, Librairie F. Rouge. In-8°, avec 14 fig. Prix : 2 francs suisses.)		1928 621 .133.1 HINZ (Fritz), Dr.-Ing., Dipl.-Ing. Über wärmetechnische Vorgänge der Kohlenstaubfeuerung unter besonderer Berücksichtigung ihrer Verwendung für Lokomotivkessel. Berlin, Verlag von Julius Springer. vi-78 Seiten mit 28 Textabb.
1928 691. (02 & 721 .9 (02 GNEL (G.), chargé du cours de béton armé à l'Université de Gand, directeur du Laboratoire du béton armé. Pratique du calcul du béton armé. Première partie. Gand, Van Rysselberghe & Rombaut, éditeurs, place Rmes. (Prix : 45 francs.)		1928 621 .43 MAGG (Julius). Dieselmaschinen. Grundlagen, Bauarten, Probleme. Mailand (Italien). Libreria internazionale Ulrico Hoepli, Galleria De Cristoforis. 4°. xvi-278 Seiten mit 1 Titel-Bild. (Preis : Lire 140.40.)
1928 625 .251 HENDER (R.), Dr., ingénieur. La question du frein pour les trains internationaux marchandises. Exposé général du problème. Aperçu des principaux systèmes de freins. Lausanne, Librairie F. Rouge. In-8° avec 25 fig. Prix : 4.50 francs suisses.)		1928 624 .2 (01 MOERSCH (Emil). Der durchlaufende Träger. Statische Berechnung d. durchlaufenden Trägers mit konstantem u. veränderlichem Trägheitsmoment, frei aufliegend u. mit elastisch eingespannten Stützen, sowie d. d. Stockwerkrahmen. Mailand (Italien). Libreria internazionale Ulrico Hoepli, Galleria De Cristoforis. Gr. 8°. viii + 242 Seiten. Mit 260 Textabb. u. e. Anh. : Tabellen f. d. Momente u. Querkkräfte durchlaufender Träger. (Preis : Lire 75.60.)

<sup>(1)</sup> The numbers placed over the title of each book are those of the decimal classification proposed by the Railway Congress conjointly with the Office Bibliographique International, of Brussels. (See "Bibliographical Decimal Classification as applied to Railway Science", by F. VON EISENBRUCH in the number for November, 1897, of the *Bulletin of the International Railway Congress*, p. 1509).



1928 621 .137.1 (02)  
**MORGNER (F. O.)**, Regierungsgewerberat.

Die Heizerschule. Vorträge über die Bedienung und die Einrichtung von Dampfkesselanlagen. Ein Lehrbuch zur Ablegung der staatlichen Heizerprüfung.

Berlin, Verlag von Julius Springer. Vierte, umgearbeitete und vervollständigte Auflage: x-163 Seiten mit 165 Textabb. (Preis : 3.90 Rm.)

1928 656. (02)  
**Rationalisierung in Verkehrsbetrieben.**

Berlin, S. 14, Verlag Guido Hackebeil A.-G. Herausgegeben von der Schriftleitung der « Verkehrstechnische Woche », Technisch-Wirtschaftliche Bücherei, Heft 38. (Preis : 3 Rm.)

1927 621 .332  
**ROTH (A.)**, Dr.-Ing.

**Hochspannungstechnik.**

Berlin, Verlag von Julius Springer. In-8°. viii + 534 Seiten mit 437 Abb., 3 Tafeln und 75 Tabellen. (Preis geb. : 31.50 Rm.)

1928 621 .335. (02)  
**SACHS (Karl)**, Dr. techn., Ingenieur der A.-G. Brown, Boveri & C<sup>ie</sup>, Baden (Schweiz).

Elektrische Vollbahnlokomotiven. Ein Handbuch für die Praxis sowie für Studierende.

Berlin W. 9, Verlagsbuchhandlung Julius Springer, Linkstrasse, 23-24. (20 × 27 Zm.). 461 Seiten mit 448 Abb. im Text und 22 Tafeln. (Preis geb. : 84 Rm.)

**In English.**

1928 621 .3 (02)  
**BOLTON (D. J.)**.

**Electrical engineering economics.**

London, W. C. 2, Chapman & Hall, Ltd., 11, Henrietta Street. (Price : 21 sh. net.)

1928 385. (09.3) (.73)  
**BROWN (Cecil K.)**.

A state movement in railroad development. The story of North Carolina's first effort to establish an east and west trunk line railroad. Early railroad and economic history.

Chapel Hill, N. C., Published by University of North Carolina Press. 300 pages. (Price : \$ 5.00.)

1928 385 .32 (.73)  
**DANIELS (Winthrop M.)**, Prof.

Interstate Commerce Commission. Organization and Administration.

Chicago, Published by Lasalle Extension University. Traffic management manual No. 49. 88 pages.

1927 313 .385 (.54) & 656 .237 (.)  
**DICKINSON (Sir A. Lowes)**, M. A., F. C. A.

Report on the system of accounting, audit and statistics of the railways owned and managed by the Government of India.

Calcutta, Published by the Government of India (8 1/4 × 13 inches.). Part I, 92 pages. (Price : 4 6 d.). Part II, 221 pages. (Price : 7 sh. 6 d.). Part III, 268 pages. (Price : 10 sh. 6 d.)

1926-1927  
**GOODMAN (John)**.

**Mechanics applied to engineering.**

New York, Longmans, Green & Co. Ninth edition. 2 volumes, diagrams. (Price : vol. I : \$ 4.80; vol. II : \$ 4.50.)

1928 669  
**HATFIELD (W. H.)**, D. Met.

**Cast iron in the light of recent research.**

London, W. C. 2, Charles Griffin & Co. Ltd., 42, Drury Lane. (Price : 16 sh. net.)

1928 385. (02) (.)  
**KILLIK (Sir Stephen)**.

**Manual of Argentine Railways for 1928.**

London, E. C. 2, Effingham Wilson, 15, Coptin Avenue. 82 pages and map. (Price : 2 sh. 6 d. net.)

1928 385 .14- (.73) & 656 .23 (.)  
**Preparation of rate cases. Procedure in rate making.**

Chicago, Ill. Published by Lasalle Extension University. Traffic management manual No. 61. 69 pages. (Price : \$ 1.00.)

1928 669  
**RAWLINSON (W.)**.

**Modern foundry operations and equipment.**

London, Chapman & Hall, Ltd. (8 3/4 × 5 1/4 inches), 312 pages. (Price : 18 sh. net.)

1928 621 .132.3 (.)  
**Southern Railway « Lord Nelson » locomotive.**

London, E. C. 4, The Locomotive Publishing Co., Ltd., 3, Amen Corner. (7 1/4 × 9 3/4 inches), 8 pages. (Price : 1 sh. 6 d.)

1928 625 .143.4 (.)  
**Steel fishplates for bull-head and flat-bottom railway rails.**

London, S. W. 1, British Engineering Standards Association, 28, Victoria Street. Publications Department. Specification No. 47, 1928. (8 3/4 × 5 1/2 × 3/8 inches), 96 pages, with several folding plates. (Price : 6 sh. net.)

1928 313 .385.  
**Text of the fortieth annual report on the statistics of railways in the United States for the year ended December 31, 1926.**

Washington, D. C. Published by U. S. Government Printing Office. 138 pages. (Price : 25 cents.)

1928 385. (02 .42)  
The Railway Diary and Officials' Directory for 1928.  
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LAUTAUD (L.). — Appareil enregistreur pour la  
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SCHONNOPP (K. E.). — Les **traversées sous-fluviales des lignes métropolitaines de Berlin.** (1 300 mots & fig.)  
1928 62. (01)  
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Pression exercée par les terres sur les **voûtes des souterrains.** (850 mots & fig.)  
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CRESTIN (F.). — Prescriptions suisses et allemandes pour l'**emploi des bois dans les constructions.** (4 100 mots, 2 tableaux & fig.)

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DESGARDES (E.). — Etude sur la **suspension des voitures à bogies.** (1 800 mots & fig.)  
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- 1928 625 .4 (.4  
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- 1928 625 .143.2 & 669  
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- 1928 625 .3  
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CALLOT. — Note sur la **détermination du profil** boudins de roue. (2 000 mots & fig.)

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août 1927), d'après le Rapport n° 6 du Commissaire  
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The Bally bridge. (1 600 words & fig.)

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BREHOB (F. H.). — North Shore Line uses combin-  
ation trolley and battery locomotives. (850 words,  
1 table & fig.)

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of low track cost. (4 000 words, 3 tables & fig.)

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A 1750 B. H. P. six-cylinder heavy-oil engine. (4 700  
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1928 621. (06 (.42) & 621 .116 (.42)  
Engineer, No. 3763, February 24, p. 204, p. 213 & p. 216.  
Waste heat recovery. (10 000 words, 3 tables & fig.)

1928 621 .335 (.43)  
Engineer, No. 3763, February 24, p. 219.  
50-cycle single-phase electric locomotive. (350 words  
& fig.)

1928 621 .116 (.73)  
Engineer, No. 3763, February 24, p. 220.  
Powdered fuel and turbulence. (800 words & fig.)

1928 62. (01 & 669 .1  
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The strength of cold-worked steel. (500 words & fig.)

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Aluminium bronze. (1 600 words.)

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Impact hardness testing. (600 words & fig.)

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No. 3763, February 24.  
The heat of mixture of molten metals. (700 words  
& fig.)

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PEARCE (J. G.). — Recent developments in cast  
iron. (1 800 words.)

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No. 3763, February 24.  
The alloys of chromium and iron. (1 800 words &  
fig.)

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Normal and shear stress in the testing of materials.  
(1 600 words & fig.)

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Allotropic changes in tin and lead alloys. (1 500 words  
& fig.)

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Forging methods. (700 words.)

1928 627  
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Reconstruction of New Holland Pier. (3 700 words  
& fig.)

1928 625  
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High-speed navvies and drag lines excavators. (1 400  
words & fig.)

1928 621 .132.8 (.49)  
Engineer, No. 3765, March 9, p. 274.  
High-pressure locomotive. (200 words & fig.)

1928 385 .113 (.4  
Engineer, No. 3765, March 9, p. 275.  
The railway year. (900 words & 3 tables.)

1928 625 .233 (.4  
Engineer, No. 3765, March 9, p. 276.  
A gear-driven train lighting set. (500 words & fig.)

1928 621 .138.2 (.4  
Engineer, No. 3766, March 16, p. 291.  
Locomotive coaling plant at Nine Elms. (3 200 words  
& fig.)

1928 621 .138.5 (.42) & 725 .33 (.4  
Engineer, No. 3767, March 23, p. 314.  
BEAMES (H. P. M.). — The reorganisation of Crewe  
Locomotive Works. (5 200 words & fig.)

1928 621 .13  
Engineer, No. 3767, March 23, p. 330.  
A new regulator for locomotives. (750 words & fig.)

1928 621 .86 (.4  
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30-ton overhead travelling crane lifting railway coaches.  
(1 500 words & fig.)

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BRADFORD (S. C.). — Logical principles of classification.  
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The cracking of boiler plate. (1 100 words.)

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Hardening in steels by tempering. (1 300 words &

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No. 3768, March 30.  
Metallography of ultra-hard metals. (600 words &  
able.)

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Abrasion testing. (1 300 words.)

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General development of the locomotive. (2 500 words.)

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P. L. M. Railway—eight-coupled compound tank  
engine. (250 words & fig.)

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Engineering, No. 3241, February 24, p. 233.  
The utilisation of waste heat. (3 800 words.)

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Engineering, No. 3241, February 24, p. 239.  
The Building Research Board. (3 800 words.)

1928 621 .116  
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Waste heat recovery. (5 000 words, tables & fig.)

1928 62. (01  
Engineering, No. 3242, March 2, p. 261.  
Secondary stresses. (2 900 words.)

1928 621. (06 (.42)  
Engineering, No. 3242, March 2, p. 265.  
The utilisation of waste heat. (2 700 words.)

1928 621 .116  
Engineering, No. 3242, March 2, p. 273.  
Automatic control of steam and water temperatures.  
300 words & fig.)

1928 656 .1 (.42) & 656 .2 (.42)  
Engineering, No. 3243, March 9, p. 293.  
The roads competition. (1 500 words.)

1928 621 .335 (.54)  
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Indian Peninsula Ry. (2 600 words & fig.)

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4-8-4 type locomotive for the Canadian National Rail-  
ways. (700 words & fig.)

1928 621 .138.5 (.42) & 725 .33 (.42)  
Engineering, No. 3245, March 23, p. 362.  
BEAMES (H. P. M.). — The reorganisation of Crewe  
locomotive works. (4 400 words & fig.)

1928 62. (01 & 621 .116  
Engineering, No. 3246, March 30, p. 386.  
Factors of safety in boiler practice. (1 500 words.)

1928 691 & 721 .9  
Engineering, No. 3248, April 13, p. 433.  
FLEMING (R.). — The life of steel buildings. (2 700  
words.)

### Engineering News-Record. (New-York.)

1928 625 .111 (.85)  
Engineering News-Record, No. 9, March 1, p. 353.  
Railway in Peru relocated to avoid avalanches. (1 600  
words & fig.)

1928 691  
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MARR (R. A.) & MARR (R. A.), Jr. — Protecting  
timber against Teredo navalis. (400 words & fig.)

1928 691 (.73) & 727 .5 (.73)  
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Temperature and humidity control in rooms for con-  
crete study. (1 200 words & fig.)

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Better concrete construction and testing. American  
Concrete Institute meeting at Philadelphia. (5 000  
words.)

1928 725 .33 (.73)  
Engineering News-Record, No. 11, March 15, p. 431.  
Screened drains for engine terminals at Chicago.  
(700 words & fig.)

1928 62. (01 (.73)  
Engineering News-Record, No. 11, March 15, p. 432.  
Devices that aid laboratory studies on concrete. (1 300  
words & fig.)

1928 725 .31 (.44)  
Engineering News-Record, No. 11, March 15, p. 447.  
ROOS (A. M.). — French railway station built of  
reinforced concrete. (600 words & fig.)

1928 625 .1 (06 (.73)  
Engineering News-Record, No. 11, March 15, p. 449.  
American Railway Engineers meet in Chicago. (3 600  
words.)



1928 625 .143.2 (.73)  
Engineering News-Record, No. 12, March 22, p. 477.  
Changes in rail-mill practice. (1 100 words.)

1928 625 .142.4 (.73)  
Engineering News-Record, No. 12, March 22, p. 480.  
Concrete ties twenty years in track. (400 words & fig.)

1928 62. (01 (.73) & 691 (.73)  
Engineering News-Record, No. 12, March 22, p. 481.  
Concrete testing pointed toward construction problems. (3 600 words.)

1928 624 .1 (.73)  
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ALLEN (C. K.). — Pneumatic caissons sealed at record depths, using quick-hardening cement. (2 100 words & fig.)

1928 624 .62 (.944)  
Engineering News-Record, No. 14, April 5, p. 538.  
Early stages of construction on 1650-ft. arch bridge at Sydney, Australia. (1 600 words & fig.)

1928 625 .142.2 (.73) & 691 (.73)  
Engineering News-Record, No. 14, April 5, p. 560.  
Outlook for production of timber railway ties. (500 words.)

1928 621 .138.1 (.73) & 725 .33 (.73)  
Engineering News-Record, No. 15, April 12, p. 581.  
Cincinnati engine terminal; Big Four Railway. (3 200 words & fig.)

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1925 62 & 721 .1  
Institut. of Engin., Austr., Vol. VI, Transactions, p. 37.  
HAWKEN (R. W. H.). — Stress in cohesive material and earth pressure. (6 900 words, 6 tables & fig.)

1925 62. (01 & 691  
Institut. of Engin., Austr., Vol. VI, Transactions, p. 83.  
MORRISON (A.). — Some investigations on the compressive strength, yield of concrete, percentage of voids, etc., of Portland cement concrete made with aggregates and cement obtained in the vicinity of Sydney. (1 900 words, 18 tables & fig.)

1925 62. (01 & 621 .87  
Institut. of Engin., Austr., Vol. VI, Transactions, p. 160.  
TOMLINSON (A.). — Simple formulæ for the capacity of crane hooks. (3 500 words & fig.)

1925 625 .142.2 (.94) & 691 (.94)  
Institut. of Engin., Austr., Vol. VI, Transactions, p. 300.  
CLARKE (S. A.). — Western Australian timber tests. (1 500 words.)

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1928 656 .22 & 656  
Journal, Institute of Transport, April, p. 270.  
CARPMAEL (R.). — Speed and safety on the railways. (20 000 words, tables & fig.)

1928 656. (09 (.  
Journal, Institute of Transport, April, p. 304.  
REES (J. F.). — The development of transport facilities in the Midlands during the first part of the nineteenth century. (6 600 words.)

#### Locomotive Railway Carriage & Wagon Review. (London.)

1928 621 .132.6 (.4)  
Loc. Ry. Carriage & Wagon Review, March 15, p. 72.  
Passenger and shunting tank locomotives, Australian Federal Rys. (800 words & fig.)

1928 656 .212.4 & 656 .21  
Loc. Ry. Carriage & Wagon Review, March 15, p. 77.  
Technical essays on shunting methods and co. (1 900 words, 1 table & fig.)

1928 621 .132.8 (.4)  
Loc. Ry. Carriage & Wagon Review, April 14, p. 1.  
The Winterthur high-pressure steam locomotive. (1 300 words & fig.)

1928 621 .335 (.485) & 621 .43 (.4)  
Loc. Ry. Carriage & Wagon Review, April 14, p. 1.  
Motor cars for Swedish Railways. (1 900 words & fig.)

#### Modern Transport. (London.)

1928 621 .132.8 (.4)  
Modern Transport, No. 468, March 3, p. 3.  
British-built steam rail cars for Ceylon Government Ry. (1 000 words & fig.)

1928 625 .1 (.4)  
Modern Transport, No. 468, March 3, p. 7.  
Railway construction in Mexico. (1 300 words & fig.)

1928 385. (09.1 (.4)  
Modern Transport, No. 469, March 10, p. 3.  
Transport developments in Italy. The Rome-Napoli « Direttissima ». (1 700 words & fig.)

1928 656  
Modern Transport, No. 469, March 10, p. 5.  
SHERRINGTON (C. E. R.). — Recent progress in signalling. (2 000 words & fig.)

1928 625 .17 (.4)  
Modern Transport, No. 469, March 10, p. 7.  
Maintenance of railway track. Average life and repairs. (1 000 words.)

1928 385. (01 (.675)  
Modern Transport, No. 469, March 10, p. 11.  
Railways in the Congo. **Katanga Line completed.** (100 words.)

1928 656 .256 (.42)  
Modern Transport, No. 470, March 17, p. 3.  
An ingenious **semi-automatic signalling installation.** (300 words & fig.)

1928 621 .132.8 (.42)  
Modern Transport, No. 470, March 17, p. 10.  
New british-built **rail motor car.** (700 words & fig.)

1928 385 .11 (.42 + .73)  
Modern Transport, No. 470, March 17, p. 11.  
BELL (R.). — **Railway progress in Britain and America during 1927.** Increasing severity of road transport competition. (3 200 words.)

1928 385. (09 (.52)  
Modern Transport, No. 470, Japanese Section, March 17, p. 4.  
**Fifty years of railway construction (Japan).** (2 200 words & fig.)

1928 385 .1 (.52)  
Modern Transport, No. 470, Japanese Section, March 17, p. 7.  
**Railway finance segregated from state budget.** (1 000 words & 5 tables.)

1928 621 .132.1 (.52) & 625 .2 (.52)  
Modern Transport, No. 470, Japanese Section, March 17, p. 13.  
**Progress towards standardisation and all-steel construction speedy change-over to automatic couplings.** (300 words, 3 tables & fig.)

1928 385 .4 (.52)  
Modern Transport, No. 470, Japanese Section, March 17, p. 17.  
**Organisation of the Japanese Railways. Scope of regional and divisional administration.** (1 500 words.)

1928 656 .253 (.42)  
Modern Transport, No. 471, March 24, p. 3.  
Approach lighting used for first time in Great Britain **colour light signalling** where normal power supply is not available. (1 600 words & fig.)

1928 385 .4 (.42) & 385 .5 (.42)  
Modern Transport, No. 471, March 24, p. 5.  
**Administration of London Underground Railways. Organisation and staff education.** (1 800 words.)

1928 656 .23 (.52)  
Modern Transport, No. 471, Japanese Section, March 24, p. 3.  
**Development of passenger and freight traffic.** (1 100 words & tables.)

1928 625 .17 (.52)  
Modern Transport, No. 471, Japanese Section, March 24, p. 4.  
**Equipment for snow protection and clearance.** (2 000 words, 3 tables & fig.)

1928 656 .253. (.52)  
Modern Transport, No. 471, Japanese Section, March 24, p. 7.  
**Power signalling on the Japanese Railways.** (1 400 words & fig.)

1928 656 .21 (.52)  
Modern Transport, No. 471, Japanese Section, March 24, p. 11.  
**Passenger stations and marshalling yards.** (1 600 words & fig.)

1928 656 .211 (.52)  
Modern Transport, No. 471, Japanese Section, March 24, p. 13.  
**State railway shipping and ferry services.** (1 500 words & fig.)

1928 621 .135. (01  
Modern Transport, No. 472, March 31, p. 6.  
**Design of tank engines.** (1 200 words.)

1928 656 .253  
Modern Transport, No. 472, March 31, p. 7.  
PRESSCOTT (C. W.). — **Flashing lights in railway working.** (1 800 words.)

1928 656 .223.2 (.52) & 313 : 656 .28 (.52)  
Modern Transport, No. 472, Japanese Section, March 31, p. 2.  
**Goods traffic operation.** (1 300 words, 3 tables & fig.)

1928 625 .61 (.52)  
Modern Transport, No. 472, Japanese Section, March 31, p. 4.  
**Privately-owned and colonial railways.** (2 000 words, 2 tables & fig.)

1928 385. (09.1 (.52)  
Modern Transport, No. 472, Japanese Section, March 31, p. 7.  
**Japanese railways in Korea and Manchuria.** (2 500 words & fig.)

1928 385 .586 (.52)  
Modern Transport, No. 472, Japanese Section, March 31, p. 9.  
**Vocational training on the Japanese Railways.** (2 300 words & fig.)

1928 385 .517 (.52)  
Modern Transport, No. 472, Japanese Section, March 31, p. 11.  
**Relations with the staff.** (3 200 words & fig.)

1928 621 .33 (.52)  
Modern Transport, No. 472, Japanese Section, March 31, p. 15.  
**Railway electrification in Japan.** (2 000 words, 3 tables & fig.)

1928 621 .33 (.52) & 625 .3 (.52)  
Modern Transport, No. 472, Japanese Section, March 31, p. 18.  
**An electrified railway on the rack system.** (1 900 words & fig.)

Proceedings, American Railway Association.  
(Signal Section.) (New-York.)

1928 656 .25 (01)  
Proceed., Amer. Ry. Ass<sup>on</sup>, Signal Section, Febr., p. 445.  
Committee I : **Economics of railway signaling.** (900 words.)

1928 625 .162 (.73) & 656 .259  
Proceed., Amer. Ry. Ass<sup>on</sup>, Signal Section, Febr., p. 448.  
Special Committee : **Highway crossing protection.** (2 000 words.)

1928 625 .256.3 (.73)  
Proceed., Amer. Ry. Ass<sup>on</sup>, Signal Section, Febr., p. 455.  
Committee VIII : **Alternating current automatic block signaling.** (4 900 words.)

1928 656 .25 (02 (.73)  
Proceed., Amer. Ry. Ass<sup>on</sup>, Signal Section, Febr., p. 471.  
Committee V : **Instructions.** (14 000 words & fig.)

1928 656 .25 (.73)  
Proceed., Amer. Ry. Ass<sup>on</sup>, Signal Section, Febr., p. 535.  
Committee X : **Signaling practice.** (5 000 words & fig.)

1928 656 .256.3 (.73)  
Proceed., Amer. Ry. Ass<sup>on</sup>, Signal Section, Febr., p. 576.  
Committee IV : **Direct current automatic block signaling.** (3 300 words.)

1928 656 .25 (01 (.73)  
Proceed., Amer. Ry. Ass<sup>on</sup>, Signal Section, Febr., p. 587.  
Committee VI : **Designs.** (300 words & fig.)

1928 656 .257 (.73)  
Proceed., Amer. Ry. Ass<sup>on</sup>, Signal Section, Febr., p. 601.  
Committee II : **Mechanical interlocking.** (11 000 words.)

1928 656 .25 (.73) & 66 (.73)  
Proceed., Amer. Ry. Ass<sup>on</sup>, Signal Section, Febr., p. 643.  
Committee XI : **Chemicals.** (9 900 words.)

1928 621 .31 (.73)  
Proceed., Amer. Ry. Ass<sup>on</sup>, Signal Section, Febr., p. 671.  
Committee IX : **Overhead and underground lines.** (700 words.)

1928 656 .257 (.73)  
Proceed., Amer. Ry. Ass<sup>on</sup>, Signal Section, Febr., p. 674.  
Committee III : **Power interlocking.** (11 000 words & fig.)

Proceedings, American Society of Civil Engineers.  
(New-York.)

1928 62. (01 & 69)  
Proceed., Amer. Soc. Civil Eng., March, p. 709.  
OESTERBLOM (I.). — **Continuous beams over three spans.** (4 900 words, 4 tables & fig.)

Proceedings, Institution of Civil Engineers.  
(London.)

1926-1927 625 .13 (.4)  
Proceed., Institut. of Civil Eng., Part 2, Vol. 224, p. 1.  
JONES (I. J.) & CURRY (G.). — **Enlargement the City and South London Railway tunnels.** (27 000 words & fig.)

1926-1927 624 .1 (.4)  
Proceed., Institut. of Civil Eng., Part 2, Vol. 224, p. 2.  
PORTER (J. P.). — **Bridge-foundations on transported chalk; with notes on piled and monolith foundations.** (20 000 words & fig.)

1926-1927 62 & 6  
Proceed., Institut. of Civil Eng., Part 2, Vol. 224, p. 2.  
CARPENTER (H. C. H.). — **Some recent services metallurgy to engineering.** (21 000 words, 6 tables & fig.)

Proceedings, Institution of Mechanical Engineers.  
(London.)

1927 621 .9 & 6  
Proceed., Institut. of Mechan. Engineers, No. 4, p. 8.  
HERBERT (E. G.). — **Report on cutting temperatures: their effect on tools and on materials subject to work.** (7 600 words & fig.)

1927 621 .13  
Proceed., Institut. of Mechan. Engineers, No. 4, p. 9.  
FRY (L. H.). — **Some experimental results from three-cylinder compound locomotive.** (32 000 words, 13 tables & fig.)

1927 621  
Proceed., Institut. of Mechan. Engineers, No. 4, p. 10.  
DAWSON (J.). — **The transmission of power by shaped balata ropes.** (1 600 words, 2 tables & fig.)

Railway Age. (New-York.)

1928 656 .258 (.7)  
Railway Age, No. 11, March 17, p. 619.  
PORTER (L. B.). — **Automatic interlockers save money.** (2 400 words & fig.)

1928 621 .133.7 (.7)  
Railway Age, No. 11, March 17, p. 629.  
KOYL (C. H.). — **Feedwater heaters reduce pitting.** (2 200 words & fig.)

1928 651 (.73) & 652 (.7)  
Railway Age, No. 11, March 17, p. 631.  
HANNA (W. L.). — **Centralized supervision of off equipment economical.** (3 200 words & fig.)

1928 625 .151 (.7)  
Railway Age, No. 11, March 17, p. 635.  
A scientifically designed manganese crossing. (5 words & fig.)



928 621 .43 (.73)  
 Railway Age, No. 11, March 17, p. 635.  
 BACON (D. L.). — Diesel engines for railroad trac-  
 ing. (4 400 words.)

928 621 .334 (.73)  
 Railway Age, No. 11, March 17, p. 639.  
 CURRIE (H. A.). — Electric trucks at Grand Central  
 Terminal. (1 000 words & fig.)

928 625 .213 (.73)  
 Railway Age, No. 11, March 17, p. 640.  
 A friction spring for 50 and 70-ton trucks. (400 words,  
 1 table & fig.)

928 621 .392 (.73) & 624 .32 (.73)  
 Railway Age, No. 12, March 24, Section one, p. 664.  
 First all-welded truss railroad bridge is put in ser-  
 vice. (2 200 words & fig.)

928 621 .139 (.73), 625 .18 (.73) & 625 .27 (.73)  
 Railway Age, No. 12, March 24, Section one, p. 669.  
 HUNKER (W. L.). — More standardization of rail-  
 way supplies is needed. (3 900 words & fig.)

928 656 .1 (.73) & 656 .2 (.73)  
 Railway Age, No. 12, March 24, Section two, p. 715.  
 HOOPS (W. T.). — Containers for bulk freight.  
 (300 words & fig.)

928 625 .1 (.73)  
 Railway Age, No. 13, March 31, p. 730.  
 Chesapeake & Ohio completes the last link in line  
 to Toledo. (3 600 words & fig.)

928 625 .258 (.73) & 656 .259 (.73)  
 Railway Age, No. 13, March 31, p. 735.  
 ELSWORTH (R. B.). — Car retarders at Selkirk  
 Rd. (2 700 words & fig.)

928 625 .18 (.73)  
 Railway Age, No. 13, March 31, p. 743.  
 ALDWELL (C. C.). — Southern Pacific lumber  
 methods highly developed. (2 600 words & fig.)

928 621 .335 & 621 .4  
 Railway Age, No. 13, March 31, p. 753.  
 STINEMETZ (W. R.). — What the gas-electric car  
 means to the railroads. (1 500 words, 2 tables & fig.)

928 656 .212.6 (.73)  
 Railway Age, No. 14, April 7, p. 792.  
 Maintrucking solves terminal congestion. (2 300 words  
 & fig.)

928 621 .39 (.73) & 625 .232 (.73)  
 Railway Age, No. 14, April 7, p. 796.  
 MARSHALL (W. C.). — Milwaukee uses electrical  
 refrigeration on diners. (2 000 words & fig.)

928 656 .212.7 (.73)  
 Railway Age, No. 14, April 7, p. 801.  
 Pennsylvania enlarges its New York produce termi-  
 nal. (2 200 words & fig.)

1928 656 .223.2 (.73)  
 Railway Age, No. 14, April 7, p. 805.  
 Short lines oppose per diem rules. (9 800 words.)

1928 625 .245 (.73)  
 Railway Age, No. 14, April 7, p. 813.  
 Bangor & Aroostock builds own dynamometer car.  
 (2 000 words & fig.)

Railway Engineer. (London.)

1928 621 .138.5 (.42)  
 Railway Engineer, May, p. 161.  
 The reorganisation of Crewe locomotive works, Lon-  
 don Midland & Scottish Ry. (2 200 words & fig.)

1928 625 .17 (.42)  
 Railway Engineer, May, p. 163.  
 British permanent way. (900 words.)

1928 621 .136.1 (.42)  
 Railway Engineer, May, p. 164.  
 New corridor locomotive tenders, London & North  
 Eastern Ry. (700 words & fig.)

1928 725 .31 (.942)  
 Railway Engineer, May, p. 166.  
 New Adelaide station, South Australian Railways.  
 (1 000 words & fig.)

1928 621 .132.1 (.68)  
 Railway Engineer, May, p. 170.  
 South African locomotive developments. (700 words  
 & 1 table.)

1928 625 .142.1  
 Railway Engineer, May, p. 171.  
 MARKWICK (A. H. D.). — Spacing of sleepers.  
 (1 300 words & 3 tables.)

1928 621 .94 (.42)  
 Railway Engineer, May, p. 173.  
 Centrally-driven carriage and wagon wheel lathes.  
 (1 900 words & fig.)

1928 621 .132.8 (.43) & 621 .133.1 (.43)  
 Railway Engineer, May, p. 175.  
 Locomotive experiments in Germany. (1 300 words &  
 fig.)

1928 656 .284 (.42)  
 Railway Engineer, May, p. 180.  
 Engine failures. (1 200 words.)

1928 625 .232 (.67)  
 Railway Engineer, May, p. 181.  
 New passenger rolling-stock for the Benguela Ry.,  
 Angola. (2 700 words & fig.)

1928 621 .132.5 (.92)  
 Railway Engineer, May, p. 187.  
 2-8-8-0 Mallet-type locomotive for the Dutch State  
 Railways, Java. (1 600 words & fig.)

# Railway Gazette. (London.)

1928 656 .222.1 (.42 + .44)  
Railway Gazette, No. 9, March 2, p. 270.  
A comparison of British and French train speeds.  
(1 200 words & tables.)

1928 625 .245 (.44)  
Railway Gazette, No. 9, March 2, p. 272.  
New **ambulance cars**, Paris-Lyons-Mediterranean Rail-  
way. (900 words, 1 table & fig.)

1928 625 .213 (.68) & 725 .36 (.68)  
Railway Gazette, No. 9, March 2, p. 275.  
**Bulk handling** of grain, South African Railways.  
(1 300 words & fig.)

1928 625 .245 (.62)  
Railway Gazette, No. 9, March 2, p. 278.  
New **laboratory car**, Sudan Government Railways.  
(450 words & fig.)

1928 347 .763 (.42)  
Railway Gazette, No. 9, March 2, p. 286.  
The railways' **road transport bills**. (4 500 words.)

1928 625 .254 (.81)  
Railway Gazette, No. 10, March 9, p. 321.  
Trials with the **vacuum brake** in freight service.  
(1 500 words.)

1928 621 .335 (.54)  
Railway Gazette, No. 10, March 9, p. 322.  
**Electric express locomotive**, Great Indian Peninsula  
Ry. (650 words & fig.)

1928 625 .232 (.67)  
Railway Gazette, No. 10, March 9, p. 325.  
New **dining cars**, Kenya & Uganda Ry. (1 000 words  
& fig.)

1928 625 .13 (.494)  
Railway Gazette, No. 10, March 9, p. 326.  
**Reconstruction** of the Grandfey viaduct, Swiss Federal  
Rys. (600 words & fig.)

1928 656 .2 (.42)  
Railway Gazette, No. 11, March 16, p. 361.  
« **Delivering the goods** ». (1 700 words.)

1928 656 .261 (.42)  
Railway Gazette, No. 11, March 16, p. 364.  
**Great Western Railway rural development and rail-  
head schemes**. (2 000 words & fig.)

1928 625 .231 (.42) & 625 .235 (.42)  
Railway Gazette, No. 11, March 16, p. 372.  
**Enamelled steel brake vans**, L. M. S. R. (800 words  
& fig.)

1928 621 .138.5 (.42) & 725 .33 (.42)  
Railway Gazette, No. 12, March 23, p. 395.  
The **re-organisation of Crewe locomotive works**.  
(4 600 words & fig.)

1928 385 .11 ( )  
Railway Gazette, No. 12, March 23, p. 401.  
**Financial results** of the Group Railway Companies  
1927. (4 200 words & 30 tables.)

1928 385 .4 ( )  
Railway Gazette, No. 12, March 23, p. 433.  
**Reorganisation** of the South African Railways. (1  
words.)

1928 621 .335 & 621 ( )  
Railway Gazette, No. 13, March 30, p. 452.  
**Locomotive transmission methods**. (900 words  
tables.)

1928 385 .11 ( )  
Railway Gazette, No. 13, March 30, p. 454.  
**Summarised profit and loss accounts and balance  
sheets** of the four group railway companies. (350 words  
& 4 tables.)

1928 621 .33 ( )  
Railway Gazette, No. 13, March 30, p. 459.  
**Further electrification** on the Southern Railway.  
(3 200 words & fig.)

1928 625 .245 ( )  
Railway Gazette, No. 14, April 6, p. 488.  
The « **Titren** » **motor-car truck**. (800 words & fig.)

1928 621 .136.1 ( )  
Railway Gazette, No. 15, April 13, p. 514.  
**Locomotive tender with side corridor**, London & No.  
Eastern Ry. (700 words & fig.)

1928 656 .1 & 650 ( )  
Railway Gazette, No. 15, April 13, p. 520.  
**POURCEL (A. M.)**. — The **motor-vehicle** as an exten-  
sion of the railway. (2 600 words.)

## Railway Magazine. (London.)

1928 385. (09.1 ( )  
Railway Magazine, April, p. 255.  
**COKE (R.)**. — The **railways** of Mesopotamia. (4  
words & fig.)

1928 656 .222.1 ( )  
Railway Magazine, April, p. 295.  
**ALLEN (C. J.)**. — **British locomotive practice**  
**performance**. (4 000 words, 6 tables & fig.)

## Railway Mechanical Engineer. (New-York.)

1928 625 ( )  
Railway Mechanical Engineer, April, p. 186.  
**FARMER (C. C.)**. — **Improvements in the air brake**  
(4 400 words & fig.)

1928 385. (071.3 ( )  
Railway Mechanical Engineer, April, p. 190.  
**BEAUCHAMP (R. H.)**. — **Apprentice training on**  
**Union Pacific**. (3 900 words.)

1928 621 .133.3 (.71) & 669 .1 (.71)  
 Railway Mechanical Engineer, April, p. 193.  
 McKNIGHT (Ch.). — Nickel steel for locomotive  
 wheels. (3 800 words, 5 tables & fig.)

1928 621 .133  
 Railway Mechanical Engineer, April, p. 198.  
 BRANDT (C. A.). — The design and proportion of  
 locomotive boilers. (5 000 words & fig.)

1928 625 .26 (.73)  
 Railway Mechanical Engineer, April, p. 204.  
 Big Four wheel shop at Beech Grove. (2 000 words  
 & fig.)

1928 725 .44 (.73)  
 Railway Mechanical Engineer, April, p. 209.  
 Modern wood mill built by the Maine Central. (1 600  
 words, 2 tables & fig.)

1928 625 .242 (.73)  
 Railway Mechanical Engineer, April, p. 213.  
 A 65-ft. car for transporting steel. (1 800 words &  
 fig.)

1928 621 .138 (.73)  
 Railway Mechanical Engineer, April, p. 221.  
 Grand Trunk Western has fireless engine house in  
 Chicago. (1 600 words & fig.)

1928 621 .85 (.52)  
 Railway Mechanical Engineer, April, p. 225.  
 Practical kinks developed in the Japanese Railway  
 shops. (1 700 words & fig.)

### Railway Signaling. (Chicago.)

1928 656 .253 (.73)  
 Railway Signaling, April, p. 125.  
 Pennsylvania installs code system of train stop with  
 signaling. (6 400 words & fig.)

1928 656 .253 (.73)  
 Railway Signaling, April, p. 133.  
 WEATHERBY (E. P.). — New signals on the Texas  
 Pacific. (2 200 words & fig.)

1928 621 .31 (.73)  
 Railway Signaling, April, p. 137.  
 FOLLETT (W. F.). — 100-cycle current from 60-cycle  
 supply. (2 300 words & fig.)

1928 621 .31 (.73) & 621 .35 (.73)  
 Railway Signaling, April, p. 144.  
 BISHOP (E.). — Principles and maintenance of the  
 -C. floating battery system. (1 700 words & fig.)

1928 625 .151 (.73)  
 Railway Signaling, April, p. 146.  
 JONES (I. S.). — Spring switches replace interlocker.  
 (1 000 words & fig.)

### South African Railways and Harbours Magazine. (Johannesburg.)

1928 656 .1 (.68) & 656 .2 (.68)  
 South African Rys. & Harbours Mag., Febr., p. 340.

The road motor services operated by the South African  
 Railways & Harbours Administration. (4 500 words  
 & fig.)

1928 385. (09 .1 (.931)  
 South African Rys. & Harbours Mag., March, p. 429.  
 The Railways of New Zealand. (5 300 words & fig.)

1928 385. (09.1 (.68)  
 South African Rys. & Harbours Mag., March, p. 446.  
 The Railways of Rhodesia. (1 600 words & fig.)

### University of Illinois Bulletin. (Urbana.)

1928 669  
 University of Illinois Bulletin, No. 22, January 31, p. 5.

LIBMAN (E. E.). — The surface tension of molten  
 metals with a determination of the capillary constant  
 of copper. (8 000 words & fig.)

1928 62. (01 & 624 .63  
 University of Illinois Bulletin, No. 24, February 14, p. 7.

WILSON (W. M.). — The effect of climatic changes  
 upon a multiple-span reinforced concrete arch bridge.  
 (7 300 words, 7 tables & fig.)

### In Spanish.

#### Ingeniería y Construcción. (Madrid.)

1928 621 .33 (01  
 Ingeniería y Construcción, Abril, p. 169.

LUCIA (P. J.). — Método de cálculo aproximado para  
 determinar si conviene o no económicamente la electrifi-  
 cación de un ferrocarril. (3 800 palabras y fig.)

1928 656 .211.5 (.460)  
 Ingeniería y Construcción, Abril, p. 174.

SERRA (A. M.). — La cubierta metálica de la esta-  
 ción de Barcelona de los Ferrocarriles de M. Z. A. (3 200  
 palabras y fig.)

### In Italian.

#### Annali dei lavori pubblici. (Roma.)

1927 625 .1 (.45)  
 Annali dei lavori pubblici, dicembre, p. 1186.

La direttissima Roma-Napoli. (3 500 parole & fig.)

1928 625 .13 (.45)  
 Annali dei lavori pubblici, gennaio, p. 33.

MIOZZI (E.). — La sistemazione del « ponte alto »  
 al km. 11 + 620 della strada nazionale dello Stelvio.  
 (3 600 parole, 2 tavole & fig.)



1928 621 .131.1  
Annali dei lavori pubblici, gennaio, p. 45.  
Apparecchi e metodi per la determinazione delle resistenze al moto dei treni e della potenza delle locomotive. (3 000 parole & fig.)

L'Ingegnere. (Roma.)

1928 388 (.45)  
L'Ingegnere, febbraio, p. 91.  
VALLECCHI (U.). — A proposito dei problemi urbanistici di Roma. (2 300 parole & fig.)

1928 385 (.45) & 625 .6 (.45)  
L'Ingegnere, febbraio, p. 99.  
OTTONE (G.). — Ferrovie principali e ferrovie secondarie. (7 000 parole.)

Rivista tecnica delle ferrovie italiane. (Roma.)

1928 621 .132.3 (.45)  
Rivista tecnica delle ferrovie ital., 15 febbraio, p. 45.  
BIANCHI (G.) & LEVI GATTINARA (V.). — Le nuove locomotive GR. 743 e 744. (1 400 parole & fig.)

1928 385 .15 (.45)  
Rivista tecnica delle ferrovie ital., 15 febbraio, p. 51.  
VEZZANI (F.). — Le ferrovie concesse all'industria privata. (6 600 parole & tabelle.)

1928 385. (07.2 (.45) & 62. (01 (.45)  
Rivista tecnica delle ferrovie ital., 15 febbraio, p. 77.  
STECCANELLA (A.). — Le prove di resilienza per il nostro materiale rotabile. (1 800 parole & 1 tabella.)

1928 625 .1 (.45)  
Rivista tecnica delle ferrovie ital., 15 marzo, p. 93.  
DI CESARE (S.). — La linea Lucca-Pontedera. (2 000 parole & fig.)

1928 385 .14 (.45)  
Rivista tecnica delle ferrovie ital., 15 marzo, p. 102.  
BATTISTI (C.). — Le tariffe viaggiatori e la stabilizzazione della valuta. (1 400 parole & 3 tabelle.)

In Dutch.

De Ingenieur. (Den Haag.)

1928 721 .9  
De Ingenieur, N° 15, 14 April, blz. B. 99.  
BUINING (J.). — Constructie en berekening van cylindrische waterreservoirs (gewapend beton). (3 300 woorden, 1 tafereel & fig.)

In Polish.

INŻYNIER KOLEJOWY. (Warszawa.)

1928 385 .113 (.43 + .)  
Inżynier Kolejowy, 1 Lutego, str. 35.  
SZTOLCMAŃ (St.). — Porównanie wyników eksploatacji polskich i niemieckich kolei za 1926 r. (2 700 sł & 6 tablice.)

1928 625 .1  
Inżynier Kolejowy, 1 Lutego, str. 39  
PRZEDPELSKI (W.). — Rola i stanowisko inżyniera w służbie drogowej. (4 000 słowa.)

1928 621 .  
Inżynier Kolejowy, 1 Lutego, str. 47.  
SZPAKOWSKI (M.). — Wytwarzanie na zapas wymiany przy naprawie parowozów. (3 000 słowa & fig.)

1928 656 .2  
Inżynier Kolejowy, 1 Marca, str. 81.  
NIKOLAJEW (W.). — Czy należy zabraniać wymiany pociągów przed czasem, wyznaczonym rozkład jazdy. (5 500 słowa.)

1928 624 .61 (.438) & 721 .4 (.4)  
Inżynier Kolejowy, 1 Kwietnia, str. 103.  
TURYN (F.). — Odbudowa 65-metrowego sklepienia ciosowego mostu nad Prutem w Jaremczu. (1 900 sł & fig.)

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Inżynier Kolejowy, 1 Kwietnia, str. 106.  
SWIESCIAKOWSKI (T.). — Nowy kierunek w budowie parowozowni na kolejach belgijskich i francuskich (2 600 słowa, 2 tablice & rys.)

In Portuguese.

Gazeta dos Caminhos de ferro. (Lisboa.)

1928 385. (01 (.4)  
Gazeta dos caminhos de ferro, n° 967, 1 de abril, p. 1.  
MACHADO (A.). — Caminho de ferro de Benguela (2 300 palavras & fig.)

Revista das Estradas de ferro. (Rio de Janeiro)

1928 656 .2  
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Densidade de trafego e das tarifas ferroviarias. (10 palavras & cuadros.)

# MONTHLY BIBLIOGRAPHY OF RAILWAYS <sup>(1)</sup>

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(JULY 1928)

[ 016 .385 (02) ]

## I. — BOOKS.

In French.			
1927	62. (01 & 669	1927	625 .156
ÉMONT (Ch.)		ELSBACH (W.).	
Étude de l'essai de traction des métaux.		Der Gleisabschluss.	
Paris (18°), chez l'auteur, 25, rue du Simplon. In-4°		Leipzig, Dr. Max Jänecke, Verlagsbuchhandlung. Bi-	
2 X 27 cm.), de 170 pages avec 266 fig.		bliothek der gesamten Technik, Band 359.53 Abb. im	
		Text. (Preis : 4.80 Rm.)	
1909	625 .1 (47)	1924-1928	62. (01
POLOW (A.).		FÖPPL (A.) & FÖPPL (L.).	
Construction de la ligne du chemin de fer d'Astrakhan		Drang und Zwang. Eine höhere Festigkeitslehre für	
ns la région des sables mouvants, ainsi que les mé-		Ingenieure, 2 Bände.	
thodes adoptées pour la lutte contre l'ensablement de		Leipzig, Verlag von Johann Ambrosius Barth, 2. Auf-	
voie. (En langue russe.)		lage. Gr. 8°. Band 1, 1924. 371 Seiten mit 70 Abb. (Preis :	
Petrograd, 1909.		16 Rm.) Band 2, 1928. 390 Seiten mit 79 Abb. (Preis :	
		16 Rm.)	
1928	62. (01 & 691	1928	625 .151
YE (P.), professeur à l'Université de Fribourg.		GOLD (H.).	
Recherches sur les propriétés thermiques du ciment.		Grosser Katechismus für den Weichen- und Stellwerk-	
Zurich, publié par le Laboratoire fédéral d'essai des		dienst.	
matériaux.		Leipzig, Verlag von Johann Ambrosius Barth, 8°, 175	
		Seiten. (Preis : 3.50 Rm.)	
1928	531. (02	1928	621 .116
EVY (Paul), ingénieur en chef des mines, professeur		HERMANN (H.).	
à l'Ecole polytechnique.		Taschenbuch für Brennstoffwirtschaft und Feuerungs-	
Cours de mécanique professé à l'Ecole supérieure des		technik.	
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Paris (6°), Gauthier-Villars & Co, imprimeurs-édi-		ten mit 137 Abb. (Taschenformat). (Preis : 6.50 Rm.)	
teurs, 55, quai des Grands-Augustins. In-8° (16 X 25			
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		HILGARD (K. E.).	
		Studienbericht über die Abdichtung von wasserdurch-	
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		Leipzig, Verlag von Johann Ambrosius Barth, 8°, III,	
		15 Seiten. (Preis : 1.20 Rm.)	
		1928	624 .63 (02
		KERSTEN (C.).	
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SENBAHN, Die, in Wort und Bild.		brücken.	
Grundzüge d. prakt. Eisenbahnwesens nach neuestem		Leipzig, Verlag von Johann Ambrosius Barth, 6. neu-	
und d. eisenbahntechn. Wissenschaft in leicht fassl.		bearbeitete Auflage. Gr. 8°. VIII, 223 Seiten mit 532	
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nde. Band 1 XXVII, 700 Seiten, Band 2. IV, 701-1463			
iten. Mappe: Abbildgstat. u. Modelle. (Preis : 45 Rm.)			

(1) The numbers placed over the title of each book are those of the decimal classification proposed by the Railway Congress conjointly with the Office Bibliographique International, of Brussels. (See "Bibliographical Decimal Classification as applied to Railway Science", by WEISSENBRUCH in the number for November, 1897, of the *Bulletin of the International Railway Congress*, p. 1509).

1928 721 .9 (02)  
**LORENZ-MEYER (M. J.).**  
 Handbuch für Eisenbetonbau. Die in- und ausländischen Eisenbetonbestimmungen.  
 Berlin W. 8. Verlag von Wilhelm Ernst & Sohn.  
 290 Seiten, mit 78 Abb. (Preis : 17 Rm.)

1927 621 .116. (02)  
**MOSER (Max).**

Der Kesselbaustoff. Abriss dessen, was der Dampfkes-  
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 Eigentümlichkeiten und d. Prüfweise d. Baustoffes  
 wissen muss. Vorträge.

Mailand (Italien). Libreria internazionale Ulrico Hoe-  
 pli, Galleria De Cristoforis. 4°. 2. verm. Auflage mit  
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1928 691. (02 & 721 .9 (02)  
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Examples in the strength and elasticity of materials.  
 London, Edward Arnold & Co. (Price: 10 sh. 6 d. net.)

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Diesel engines for land and marine work.  
 New York, D. Van Nostrand Co. (6 × 9 inches), 320  
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**Coal and the Norfolk and Western Railway.**

Roanoke, Va., Published by the Coal Traffic Depart-  
 ment, Norfolk and Western Railway. One pamphlet  
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**FREEMAN (John R.), Jr., DOWDELL (R. L.) & BER-  
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Rail steel. Its endurance and other properties. Part I:  
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Washington, D. C., Published by Government Pri-  
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Electric control gear and industrial electrification.  
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[ 016 .385. (05) ]

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1928 313 : 656 .28 (.44)  
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MAISON (F.). — Note sur la situation générale des  
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des accidents survenus en 1926. (14 000 mots & ta-  
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#### Annales des travaux publics de Belgique. (Bruxelles.)

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Ann. des travaux publics de Belgique, avril, p. 219.  
MESNAGER (A.) & VEYRIER (J.). — Les barrages-  
réservoirs à voutes et à charge fractionnée. (9 300 mots  
& fig.)

#### Arts et Métiers. (Paris.)

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DOL (A.). — Note au sujet du renversement de mar-  
che des moteurs semi-Diesel. (1 400 mots & fig.)

1928 621 .115  
Arts et Métiers, mai, p. 187.  
DURIN (H.). — Notes sur l'utilisation d'un conden-  
seur sur les locomotives à vapeur. (2 900 mots & fig.)

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Arts et Métiers, mai, p. 197.  
DUFOUR (F. E.). — Un nouvel appareil pour l'essai  
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#### Bulletin technique de la Suisse romande. (Vevey.)

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Les chemins de fer allemands et les automobiles.  
(800 mots & tableaux.)

#### Génie civil. (Paris.)

1928 721 .9  
Génie Civil, n° 2384, 21 avril, p. 384.  
MAURIN (C.). — Hangar en béton armé de l'entrepôt  
central de la marine, au centre d'aviation d'Orly (Seine).  
(200 mots & fig.)

1928 621 .133.3  
Génie Civil, n° 2384, 21 avril, p. 393.  
La construction des corps de chaudières à haute pres-  
sion. (700 mots & fig.)

1928 725 .31 (.44)  
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La reconstruction de la gare de Lens (Nord). Le  
nouveau bâtiment des voyageurs. (2 100 mots & fig.)

1928 62. (01 & 624 .2  
Génie Civil, n° 2385, 28 avril, p. 408.  
SALMIN (C.). — Application du principe de la super-  
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tinues. (1 900 mots & fig.)

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Locomotive électrique à grande vitesse, construite par  
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la Compagnie des chemins de fer P. L. M. (3 400 mots  
& fig.)

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Génie Civil, n° 2386, 5 mai, p. 440.  
MESTRE (A.). — Le funiculaire aérien du Sagro  
(Italie) pour le transport du marbre. (1 700 mots & fig.)

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Génie Civil, n° 2387, 12 mai, p. 469.  
HORNEY (F.). — Les réchauffeurs d'air pour foyers  
de chaudières. (750 mots & fig.)

#### Les chemins de fer et les tramways. (Paris.)

1928 625 .142.4  
Les ch. de fer et les tramw., mai, p. 95.  
Le type le plus récent de traverses en béton armé.  
(4 200 mots & fig.)

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Les ch. de fer et les tramw., mai, p. 105.  
Les applications des roulements à rouleaux au maté-  
riel des tramways. (3 000 mots, 1 tableau & fig.)

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Les ch. de fer et les tramw., mai, p. 109.  
CROZET (A.). — Les revêtements des cours des  
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#### L'Industrie des voies ferrées et des transports automobiles. (Paris.)

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1928 621 .331  
L'Ind. voies ferrées et transp. autom., avril, p. 336.  
VENTE. — Interconnexion des sous-stations. (4 800  
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**Revue de l'Ecole polytechnique. (Bruxelles.)**

- 1928 536. (01)  
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BAUDOUX (P.). — L'isolation thermique. (5 300 mots & fig.)

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Résultats d'exploitation des chemins de fer fédéraux suisses pour 1926 et prévisions budgétaires pour 1928. (4 800 mots.)

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Les chemins de fer funiculaires suspendus pour le transport des voyageurs. (1 100 mots & fig.)

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- 1928 313 .385. (01)  
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BLOCH (R.). — La statistique dans les chemins de fer. (16 000 mots.)

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- 1928 621 .3  
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SCHRAM (W.) & ZEBROWSKI (W.). — Über die Feuersicherheit von elektrischen Isolierstoffen und ein neues Verfahren zu ihrer Bestimmung. (2 200 Wörter, 2 Tabellen & Abb.)

- 1928 385 .1 (.494) & 621 .33 (.494)  
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Die Elektrisierung der Schweizerischen Bundesbahnen (S. B. B.) und die Wirtschaftlichkeit des elektrischen Bahnbetriebes. (1 100 Wörter & Abb.)

- 1928 656 .254  
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STEINER (K.). — Drahtlose Rangierbefehlsübermittlung (Rangier-Funk). (1 100 Wörter & Abb.)

- 1928 621 .331 (.4)  
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- 1928 625 .144.4 (.7)  
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LAVAN (T. J.). — Attention to details is the secret of low track cost. (4 000 words, 4 tables & fig.)

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BAUMGARTEN (A. W.). — Energy from dynamo braking cuts heating costs. (2 400 words, 3 tables & fig.)

- 1928 625 .26 (.7)  
Electric Railway Journal, No. 16, April 21, p. 653.  
SQUIER (C. W.). — Truck overhauling systematic in Brooklyn. (2 700 words & fig.)

- 1928 621 .331 (.7)  
Electric Railway Journal, No. 17, April 28, p. 688.  
SWIFT (H. L.). — Cincinnati installs full-automatic supervisory-controlled distribution system. (2 900 words & fig.)

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Electric Railway Journal, No. 19, May 12, p. 767.  
Cleveland personnel department organized to improve employee morale. (1 600 words, 4 tables & fig.)

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- 1928 624 .51 (.7)  
Engineer, No. 3771, April 20, p. 426.  
The Hudson River bridge. (4 000 words & fig.)

- 1928 721 .1 (.4)  
Engineer, No. 3771, April 20, p. 442.  
A new air pressure piling system. (1 000 words & fig.)

- 1928 621 .132.8 (.4)  
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The Kitson-Still locomotive. (1 500 words, fig. tables.)

928 669 .1 (06 (.42)  
 ineer, No. 3774, May 11, p. 510.  
 on and Steel Institute (Meeting). (10 000 words.)

928 621 .335 (.42) & 621 .43 (.42)  
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 00 B. H. P. oil electric train. (1 700 words & fig.)

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928 621 .138.5 & 725 .33  
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 he longitudinal shop. (1 700 words.)

928 62. (01 & 621 .116  
 ineering, No. 3246, March 30, p. 386.  
 actors of safety in boiler practice. (1 600 words.)

928 624 .62 (.944)  
 ineering, N° 3249, April 20, p. 467.  
 he Sydney Harbour bridge. (5 000 words & fig.)

928 624 .63 (.42)  
 ineering, No. 3251, May 4, p. 527.  
 he Royal Tweed bridge, Berwick. (1 100 words & fig.)

928 62. (01 & 669 .1  
 ineering, No. 3251, May 4, p. 557.  
 APSELL (H. J.). — The fatigue-resisting proper-  
 of mild steel. (2 100 words, 1 table & fig.)

928 656 .213 (.42) & 725 .3 (.42)  
 ineering, No. 3252, May 11, p. 565.  
 extension of the Royal Edward dock at Avonmouth.  
 00 words & fig.)

928 669 .1  
 ineering, No. 3252, May 11, p. 583.  
 he heterogeneity of steel ingots. (2 800 words &  
 ble.)

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928 625 .143.2 & 625 .143.3  
 ineering News-Record, No. 16, April 19, p. 613.  
 etection of transverse fissures. (800 words.)

928 624 .7 (.73)  
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 ERKENBLIT (S. E.). — Steel viaduct masked as  
 a structure. (1 600 words & fig.)

928 625 .143.3 (.73) & 625 .245 (.73)  
 ineering News-Record, No. 16, April 19, p. 622.  
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928 625 .111 (.72)  
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 ILAW (G. H. T.). — Locating railway from Mexico  
 to Pacific coast. (1 100 words & fig.)

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1928 621 .33 (.42)  
 Journal of the Institute of Transport, May, p. 328.  
 COX (E. C.). — Southern Railway electrification.  
 (12 000 words & fig.)

1928 38  
 Journal of the Institute of Transport, May, p. 344.  
 WHYTE (W. H.). — Influence of transport on in-  
 dustrial development. (8 600 words.)

1928 656 .1 (.42)  
 Journal of the Institute of Transport, May, p. 355.  
 CLEWES (J. L.). — Goods transport by road motor.  
 Its financial and statistical aspects and limitations.  
 (11 000 words & tables.)

1928 388  
 Journal of the Institute of Transport, May, p. 370.  
 McDONNELL (J.). — Passenger traffic problems in  
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1928 625 .174 (.42)  
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 Combating snowstorms on British railways (1 300  
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 TREACHER (E.). — Ballast and ballasting. (1 500  
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 TAZEWELL (B.). — Ballast and ballasting. (2 500  
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1928 625 .144.4  
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1928 725 .33  
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 WOLSTENCROFT (J.). — Inspection and repair pits  
 for railway rolling stock. (2 400 words & fig.)

1928 698  
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 GRAVATT (W.). — Paint and painting. (2 800  
 words.)

### Mechanical Engineering. (New-York.)

1928 621 .83  
 Mechanical Engineering, April, p. 303.  
 The influence of elasticity on gear-tooth loads.  
 (1 000 words & 20 tables.)

1928 385. (071  
 Mechanical Engineering, April, p. 307.  
 Foreman training. (8 800 words.)



## Modern Transport. (London.)

1928 621 .33 (.68)  
Modern Transport, No. 474, April 14, p. 2.

LYDALL (F.). — Railway electrification in South Africa. Conversion of the Glencol-Pietermaritzburg Section. (4 000 words & fig.)

1928 621 .33 (.42)  
Modern Transport, No. 474, April 14, p. 9.  
Electrification of the Southern Railway. (1 600 words.)

1928 621 .132.8 (.42)  
Modern Transport, No. 477, May 5, p. 3.  
The « Sentinel-Cammell » six-cylinder geared rail-car, London & North Eastern Ry. (2 100 words & fig.)

1928 385 .3 (.42), 656 .1 (.42) & 656 .2 (.42)  
Modern Transport, No. 478, May 12, p. 10.  
Railway Companies bills before the Joint Committee. (5 500 words.)

1928 385 .11 (.94)  
Modern Transport, No. 478, May 12, p. 13.  
Growth of traffic and the gauge handicap. (1 500 words.)

1928 656 .213 (.42)  
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The handling of Liverpool's freight traffic. (2 900 words & fig.)

1928 656 .213 (.42)  
Modern Transport, No. 478, Liverpool Congress Section No. 1, May 12, p. 11.  
Docks and railways in Birkenhead. (1 900 words & fig.)

1928 656 .213 (.42)  
Modern Transport, No. 478, Liverpool Congress Section No. 1, May 12, p. 23.  
Rebuilding of Morpeth dock goods station. (1 100 words & fig.)

1928 656 .211 (.42)  
Modern Transport, No. 478, Liverpool Congress Section No. 1, May 12, p. 24.  
Passenger services and terminal facilities (Liverpool). (2 600 words & fig.)

## Proceedings, American Society of Civil Engineers. (New-York.)

1928 69 (09)  
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WESTERGAARD (H. M.). — One hundred fifty years advance in structural analysis. (6 400 words.)

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1928 385 .21 (.73)  
Railway Age, No. 15, April 14, p. 848.  
Government subsidizing of competition with railways. (1 800 words.)

1928 625 .13 (.73) & 693 (09)  
Railway Age, No. 15, April 14, p. 850.  
Build a special concrete plant to line tunnel. (2 000 words & fig.)

1928 385 .21 (09)  
Railway Age, No. 15, April 14, p. 855.  
DUNCAN (C. S.). — Government operation of b lines. (5 600 words.)

1928 621 .138 (09)  
Railway Age, No. 15, April 14, p. 861.  
Grand Trunk Western equips fireless engine at Chicago. (1 700 words & fig.)

1928 656 .254 (.73) & 656 .284 (09)  
Railway Age, No. 15, April 14, p. 863.  
Dispatcher signaling system operates through storm. (1 000 words & fig.)

1928 621 .335 (.73) & 621 .4 (09)  
Railway Age, No. 15, April 14, p. 866.  
Gas-electric unit for rail cars. (2 600 words & fig.)

1928 656 .223.2 (09)  
Railway Age, No. 15, April 14, p. 871.  
CASS (L. S.). — Short lines oppose per diem rule. (4 300 words.)

1928 656 .22 (09)  
Railway Age, No. 15, April 14, p. 875.  
Train-hour saving cuts overtime. (1 500 words & fig.)

1928 656 .212 (09)  
Railway Age, No. 16, April 21, p. 903.  
Lackawanna rebuilds Binghamton freight facilities. (3 500 words & fig.)

1928 621 .335 (09)  
Railway Age, No. 16, April 21, p. 906.  
TALIAFERRO (W. R.). — Electric locomotives rate on three different voltages. (2 000 words & fig.)

1928 621 .138.2 (.73), 625 .18 (.73) & 625 .27 (09)  
Railway Age, No. 16, April 21, p. 913.  
Missouri-Kansas-Texas saves \$ 250 000 yearly for reclamation. (2 200 words & fig.)

1928 656 .254 (09)  
Railway Age, No. 16, April 21, p. 917.  
Street traffic lights at railroad crossing expedite movements. (1 200 words & fig.)

1928 385 .32 (09)  
Railway Age, No. 16, April 21.  
An organization chart of the Interstate Commerce Commission.

1928 621 .138.1 & 656 .254 (09)  
Railway Age, No. 16, April 21, p. 919.  
Modern yards and terminals. (2 600 words & fig.)

1928 625 .13 (09)  
Railway Age, No. 16, April 21, p. 923.  
Tunnel atmosphere tests on Chesapeake & Ohio. (2 200 words & 2 tables.)

- 928 625 .13 (.73)  
 Railway Age, No. 17, Section one, April 28, p. 954.  
 Pennsylvania works deerick cars in double harness.  
 (100 words & fig.)
- 928 621 .335 (.81)  
 Railway Age, No. 17, Section one, April 28, p. 958.  
 MAIN (B. S.). — Electric locomotives for Brazil.  
 (100 words, 2 tables & fig.)
- 928 621 .132.8 (.43) & 621 .133.1 (.43)  
 Railway Age, No. 17, Section one, April 28, p. 963.  
 RADENWITZ (A.). — Pulverized coal burning loco-  
 motive built in Germany. (1 500 words & fig.)
- 928 656 .253 (.73)  
 Railway Age, No. 17, Section one, April 28, p. 971.  
 Further hearings on automatic train control. (7 500  
 words.)
- 928 621 .133.1 (.73)  
 Railway Age, No. 17, Section one, April 28, p. 977.  
 JORKHOLM (J. E.). — Front end blowers as fuel  
 cutters. (1 300 words.)
- 928 656 .1 (.73) & 656 .2 (.73)  
 Railway Age, No. 17, Section two, April 28, p. 1007.  
 Union Pacific motor coaches supplement train service.  
 (100 words & fig.)
- 928 656 .1 (.73) & 656 .2 (.73)  
 Railway Age, No. 17, Section two, April 28, p. 1012.  
 Leading begins highway operation. (1 100 words, ta-  
 ble & fig.)
- 928 656 .1 (.73)  
 Railway Age, No. 17, Section two, April 28, p. 1022.  
 Central of Georgia designs combination motor coach  
 truck. (700 words & fig.)
- 928 621 .138.1 (.73), 625 .1 (.73) & 725 .33 (.73)  
 Railway Age, No. 19, May 12, p. 1083.  
 Norfolk & Western enlarges facilities at Williamson,  
 Va. (5 000 words & fig.)
- 928 657. (06 (.73)  
 Railway Age, No. 19, May 12, p. 1093.  
 Railway Accounting Officers Association meets at  
 Santa. (10 000 words & fig.)
- 928 621 .331 (.73) & 621 .332 (.73)  
 Railway Age, No. 19, May 12, p. 1101.  
 Power for electric traction. (3 700 words, 1 table  
 & fig.)
- 928 621 .133.1 (06 (.73)  
 Railway Age, No. 19, May 12, p. 1105.  
 Railway fuel problems discussed at Chicago conven-  
 tion. (3 600 words & fig.)
- 928 621 .134.1 (.73)  
 Railway Age, No. 19, May 12, p. 1109.  
 Franklin reversible locomotive booster. (700 words  
 & fig.)

## Railway Engineering & Maintenance. (Chicago.)

- 1928 625 .143.5  
 Railway Engineering and Maintenance, April, p. 156.  
 BALDRIDGE (C. W.). — What is a track spike for?  
 (1 700 words, 1 table & fig.)
- 1928 621 .392 (.73) & 625 .143.4 (.73)  
 Railway Engineering and Maintenance, April, p. 158.  
 Southern Pacific uses electric arc to build up battered  
 rails. (700 words & fig.)
- 1928 693  
 Railway Engineering and Maintenance, April, p. 161.  
 Explaining the water-cement ratio to concrete fore-  
 men. (2 300 words & fig.)

## Railway Gazette. (London.)

- 1928 656 .257 (.42)  
 Railway Gazette, No. 16, April 20, p. 549.  
 311 lever power signal frame for London Bridge,  
 Southern Railway. (1 200 words & fig.)
- 1928 656 .211.7 (.42)  
 Railway Gazette, No. 16, April 20, p. 554.  
 London Midland & Scottish services to Northern Ire-  
 land. (2 100 words, 1 table & fig.)
- 1928 621 .132.3 (.42)  
 Railway Gazette, No. 17, April 27, p. 580.  
 « Claughton » locomotives fitted with enlarged boi-  
 lers, London Midland & Scottish Railway. (250 words  
 & fig.)
- 1928 625 .232 (.42)  
 Railway Gazette, No. 17, April 27, p. 583.  
 De Luxe travel on « The Flying Scotsman », London  
 & North Eastern Ry. (500 words & fig.)
- 1928 625 .175 (.931)  
 Railway Gazette, No. 17, April 27, p. 584.  
 Inspection rail motor for New Zealand Railways.  
 (600 words & fig.)
- 1928 656 .253 (.82)  
 Railway Gazette, No. 17, April 27, p. 586.  
 Temperley Junction re-signalling, Buenos Ayres Great  
 Southern Railway. (3 600 words & fig.)
- 1928 656 .222.1 (.42)  
 Railway Gazette, No. 18, May 4, p. 612.  
 Inaugural King's Cross-Edinburgh non-stop runs,  
 London & North Eastern Railway. (1 500 words & fig.)
- 1928 621 .132.5 (.83)  
 Railway Gazette, No. 18, May 4, p. 613.  
 New Mikado (2-8-2) type locomotives for the An-  
 tofagasta (Chili) & Bolivia Railway. (500 words & fig.)
- 1928 621 .335 (.54)  
 Railway Gazette, No. 18, May 4, p. 616.  
 Electric locomotives for the Great Indian Peninsula  
 Ry. (700 words & fig.)

1928 625 .232 (.82)  
 Railway Gazette, No. 18, May 4, p. 619.  
 Articulated carriages on the Central Argentine Ry.  
 (600 words & fig.)

### Railway Magazine. (London.)

1928 621 .33 (.42)  
 Railway Magazine, May, p. 339.  
 Further electrification on the Southern Railway.  
 (3 400 words & fig.)

1928 656 .222.1 (.42)  
 Railway Magazine, May, p. 375.  
 ALLEN (C. J.). — British locomotive practice and  
 performance. (5 000 words & fig.)

### University of Illinois Bulletin. (Urbana.)

1928 624 .2  
 University of Illinois Bulletin, No. 175, April, p. 1.  
 RICHARD (F. E.) & LARSON (L. J.). — An inves-  
 tigation of web stresses in reinforced concrete beams.  
 (20 000 words, 7 tables & fig.)

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#### Gaceta de los Caminos de hierro. (Madrid.)

1928 621 .133.7  
 Gaceta de los Caminos de hierro, n° 3546, 20 de abril,  
 p. 133.  
 Incrustaciones y sedimentos de las calderas de las  
 locomotoras. (900 palabras.)

#### Ingeniería y Construcción. (Madrid.)

1928 621 .132.8  
 Ingeniería y Construcción, mayo, p. 237.  
 REDER (G.). — Locomotoras de gran potencia para  
 vía estrecha. (1 800 palabras & fig.)

#### Revista de Obras Públicas. (Madrid.)

1928 621 .332. (01)  
 Revista de Obras Públicas, n° 8, 15 de abril, p. 135.  
 JOSE LUCIA (P.). — Cálculo económico de las gran-  
 des líneas de transporte de energía eléctrica. (1 500  
 palabras.)

1928 624 .63 (.460)  
 Revista de Obras Públicas, n° 8, 15 de abril, p. 139.  
 SALVATIERRA IRIARTE (C.). — Puente sobre el  
 río Tajo en Alconétar. (2 600 palabras & fig.)

1928 624. (06)  
 Revista de Obras Públicas, n° 8, 15 de abril, p. 148.  
 MENDIZABAL (D.). — Congreso internacional de  
 Zurich dedicado a la construcción de puentes. (2 900 pa-  
 labras.)

1928 624 .63 (.4)  
 Revista de Obras Públicas, n° 9, 1° de mayo, p. 159.  
 HUE (F.). — El viaducto de Ternel. (3 200 pala-  
 & fig.)

1928 621 .4  
 Revista de Obras Públicas, n° 9, 1° de mayo, p. 16.  
 CAMARA RICA (J.). — Influencia de las ma-  
 suetas a movimientos alternativos en los motores  
 explosión. (1 800 palabras & fig.)

### In Italian.

#### L'Ingegnere. (Roma.)

1928 385 .15 (.  
 L'Ingegnere, aprile, p. 210.  
 Le cessioni delle linee ferroviarie. A discussione  
 ta. (3 800 parole.)

1928 656 .1 & 65  
 L'Ingegnere, aprile, p. 214.  
 La ferrovia ed i suoi concorrenti nel trasporto  
 velocità. (2 900 parole.)

1928 385 & 62  
 L'Ingegnere, marzo, p. 175.  
 LANINO (P.). — Rete principale e ferrovie se-  
 darie. (1 700 parole.)

#### Rivista tecnica delle ferrovie italiane. (Roma.)

1927 625 .244 (.  
 Rivista tecnica delle ferrov. ital., 15 aprile, p. 145.  
 PERFETTI (A.). — La stazione ambulante del fre  
 (2 900 parole & fig.)

1927 625 .5  
 Rivista tecnica delle ferrov. ital., 15 aprile, p. 152.  
 VALECCHI (U.) & CARRETTO (C.). — Il cal-  
 delle funivie (11 000 parole, 2 tabelle & fig.)

#### Rivista dei Trasporti. (Milano.)

1928 621 .13 & 621  
 Rivista dei Trasporti, aprile, p. 55.  
 BALATRONI (F.). — Sul confronto fra tracciati  
 roviari (trazione a vapore ed elettrica). (5 000 pa-  
 & fig.)

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1928 625 .3  
 De Ingenieur, n° 16, 18 April, p. 122.  
 De techniek van het opspuiten van verf en lak  
 spoorwegrijtuigen. (4 000 woorden.)

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 De Ingenieur, n° 19, 12 Mei, bl. B. 121.  
 VAN DUNNÉ (L. J.) & BURKY (J. F. W.). —  
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 den & fig.)



**In Portuguese.**

**Gazeta dos Caminhos de ferro. (Lisboa.)**  
**1928** **656 .21 (.469)**  
 Gazeta dos Caminhos de ferro, n° 968, 16 de abril, p. 113.  
 de SOUZA (J. F.). — **Asestações de caminhos de**  
**ferro em Lisboa. (3 300 palavras.)**

**Revista das Estradas de ferro. (Rio de Janeiro.)**  
**1928** **385. (09.3 (.81))**  
 Revista das Estradas de ferro, n° 66, 15 de abril, p. 173.  
 O 70° Anniversario da Central do Brasil. Alguns dados  
 bre a evolução historica da grande ferrovia nacional.  
 800 palavras & fig.)

**1928** **656 .256.3 (.73)**  
 Revista das Estradas de ferro, n° 67, 30 de abril, p. 205.  
 O « block-system » automatico nos Estados Unidos.  
 700 palavras & fig.)

**In Polish.**

**INŻYNIER KOLEJOWY. (Warszawa.)**

**1928** **621 .131**  
 Inzynier Kolejowy, 1 Maja, str. 129.  
 LOPUSZINSKI (W.). — Moc parowozu, jego komin  
 i dychawa, jako objekty doswiadczonego badania.  
 (3 000 słowa, 1 tablica & rys.)

**1928** **385 .573**  
 Inzynier Kolejowy, 1 Maja, str. 139.  
 DALEWSKI (E.). — Próby psychotechnicznych eg-  
 zaminov uzdolnienia w służbie drogowej. (3 000 słowa,  
 4 tablice & rys.)

**1928** **656 .222**  
 Inzynier Kolejowy, 1 Maja, str. 148.  
 SKAWINSKI (S.). — Skrocony sposob obliczenia  
 czasu biegu pociagu i rozchodu wody miedzy stacjami.  
 (1 500 słowa & rys.)



# MONTHLY BIBLIOGRAPHY OF RAILWAYS <sup>(1)</sup>

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[ 016 .385 (02 )

## I. — BOOKS.

In French.			
1928	656. (02)	1928	624 .2
ONNAL (A).		VAN HECKE (Albert), professeur à l'Université de Louvain.	
Exploitation commerciale des chemins de fer.		Calcul des poutres rivées. D'après une nouvelle méthode servant de base à des tables et à des abaques pour la détermination rapide et exacte a) du poids mort des poutres, b) des dimensions de leurs éléments constitutifs.	
Paris (6°), Dunod, éditeur, 92, rue Bonaparte. (12 18 cm.), xvi-654 pages, 16 fig. (Prix : fr. 77.50.)		Louvain, Uystpruyst, Librairie universitaire. Paris, Dunod, 92, rue Bonaparte.	
1928	621 .133.1	In German.	
ERTHELOT (Ch.), ingénieur-chimiste.		1928	62. (02)
Les combustibles dans l'industrie moderne.		FOERSTER (Max).	
Paris (6°), J.-B. Baillière et fils, éditeurs, 19, rue Manteuffel. In-8° (16×23.5 cm.) de 656 pages avec 3 fig. (Prix: 90 francs.)		Taschenbuch für Bauingenieure.	
1928	385 .21 (.493)	Berlin W. 9, Verlag von Julius Springer. 1. Band, 1115 Seiten; 2. Band, 1422 Seiten, mit 3238 Abb. (Preis: 42.50 Rm.)	
E LEENER (Georges), professeur à l'Université libre de Bruxelles.		1928	385. (09.1)
Chemins de fer et canaux en Belgique.		FUHLBERG-HORST (John).	
Bruxelles, Maurice Lamertin, libraire-éditeur, 58-60, rue Coudenberg. (16×24 cm.), 64 pages.		Die Eisenbahn im Bild. III. Band aus der Reihe « Wunder der Technik ».	
1928	669	Stuttgart, Dieck & Co. 8. Auflage, 757 Bilder, 3 Uebersichtstafeln. (Preis: 12 Rm.)	
VANS (Ulrick R.), M. A.		1927	621 .33 (.494)
La corrosion des métaux. Traduit sur la 2° édition anglaise par A. SCHUBERT, ingénieur des Arts-et-Métiers.		GÖTTLER.	
Paris (6°), Dunod, éditeur, 92, rue Bonaparte. (16×24 cm.), xvi-324 p., 28 fig. (Prix : 64 francs.)		Die elektrifizierten Hauptlinien der Schweizerischen Bundesbahnen.	
1928	385. (09.3) (.44)	Bern, Bolliger & Eicher, 56 Seiten mit 46 Abb. (Preis brosch.: 2 Schweizer Frank.)	
ARDÉ (Maurice).		1927	654
La restauration des chemins de fer français depuis 1825.		HERRMANN (J.).	
Paris (6°), Gauthier-Villars & Co, imprimeurs-éditeurs, 55, quai des Grands-Augustins. In-8° (16×25 cm.) de 134 pages. (Prix : 20 francs.)		Die elektrische Telegraphie mit Drahtleitung. Band I: Die Telegraphie mit Morsezeichen. Teil 2 : Die Typendrucktelegraphen.	
1927	621 .135.3 & 625 .213	Berlin und Leipzig, Verlag von Walter de Gruyter & Co. In-16. Band I (Sammlg. Götschen Nr. 172) mit 124 Textabb. und 134 Seiten. (Preis geb.: 1.50 Rm.). Teil 2: (Sammlg. Götschen Bd. 975) mit 76 Textabb., 16 Tafeln und 125 Seiten. (Preis geb.: 1.50 Rm.)	
CYNAL (C.).			
Les ressorts. Etude complète et méthode rapide de calcul.			
Paris, chez l'Auteur. 2° édition. (13 × 20 cm.), de 76 pages avec 41 fig.			

(1) The numbers placed over the title of each book are those of the decimal classification proposed by the Railway Congress conjointly with the Office Bibliographique International, of Brussels. (See « Bibliographical Decimal Classification as applied to Railway Science », by WEISSENBRUCH in the number for November, 1897, of the *Bulletin of the International Railway Congress*, p. 1509).



1928 621 .133.1  
**HINZ.**  
 Ueber wärmetechnische Vorgänge der Kohlenstaub-  
 feuerung.  
 Berlin, W. 9, Verlag von Julius Springer. 76 Seiten  
 mit 28 Abb. (Preis: 7.50 Rm.)

1927 625 .14  
**SCHMITZ (Arthur)**, Dr. phil., Dr.-Ing., Reichsbahnrat  
 in Köln-Deutz.  
 Die Unterbettung und Lagerung des Querschwellen-  
 gleises.  
 Wittenberg, A. Ziemsen. 163 Seiten und 159 Abb. im  
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 Adoption of automatic couplers on Japanese Rail-  
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 Tokyo. Published by the Ministry of Railways. 21  
 pages, 22 fig., diagrams and pictures.

1928 625 .122  
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 Excavating machinery as represented by power sho-  
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 New York, Simmons-Boardman Publishing Co. 12th  
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 Essay I: The first hundred railway engines.  
 Essay II: British locomotives in North America.  
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 Employee stock purchase plans in the United States.  
 New York City. Published by National Industrial  
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 M. Sc.  
 The causes of failure of wrought-iron chains.  
 London, H. M. Stationery Office. Department of  
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1928 6  
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 Marine borers and their relation to marine constru-  
 tion on the Pacific Coast.  
 Berkeley, Cal. (U. S. A.). Published by the Univer-  
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**International Railway Master Blacksmiths' Association**  
**Proceedings**, Meeting held at Buffalo, N. Y., August  
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 Detroit, Mich. Published by the Association, William  
 J. Mayer, secretary-treasurer, 2347, Park Avenue  
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1928 385. (09.3 (.7  
**KERR (John Leeds).**  
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 ciety. 50 pages. (Price: \$ 2.50.)

1928 385. (09 (.4  
**LEIGH (D.).**  
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 Ministry of Labour. Report of an inquiry in  
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**er, Vol. I, No. I, May 25, 1928.** Review of develop-  
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 Railroad companies, U. S., Cuba, Canada, Mexico and  
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[ 016 .385. 03 ]

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 (Bruxelles.)

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**outre de rigidité. (3 000 mots, 2 tableaux & fig.)**

### Arts et Métiers. (Paris.)

1928 62. (01)  
**ts et Métiers, juin, p. 221.**  
**IL (H.). — Note sur la résistance des anneaux**  
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**pour l'industrie nationale. (Paris.)**

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**SAUVAGE (E.). — Note sur les écrous crénelés, (300**  
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1928 656 .211 (.44)  
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1928 621 .31  
**TAYLOR (W. T.).**  
**Distribution of electricity by overhead lines.**  
 London, W. C. 2., Charles Griffin and Co. Ltd.,  
 Drury Lane, 42. (Price: 25 sh. net.)

1928 385. (02)  
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 London, S. W. 1. The Directory Publishing Co. Ltd.,  
 33, Tothill Street. (5 1/2×8 1/2 inches) 404 pages  
 (Price: 20 sh. net.)

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**VARDON (J.), Executive Engineer, North Western**  
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**Tube wells on the North Western Ry. (India) 1925-**  
**1927.**  
 Calcutta. Government of India, Central Publication  
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 ches). 31 pages, tables & fig. (Price: As. 12 or 1 sh.  
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**La Compagnie du chemin de fer du Reich en 1927.**  
 (3 600 mots.)

1928 313 .385 (.494)  
**Bull. des transp. intern. par ch. de fer, mai, p. 191.**  
**Statistique des chemins de fer suisses pour l'année**  
**1926. (500 mots & tableau.)**

### Bulletin de l'Union internationale des chemins de fer (Paris).

1928 385. (09 (.52) & 385 .113 (.52)  
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**Les Chemins de fer de l'Empire du Japon. (13 000**  
**mots & 1 carte.)**

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1928 385 .113 (.44)  
**Chronique des transports, n° 9, 10 mai, p. 2.**  
**Les résultats de l'exploitation de la Compagnie P.L.M.**  
**en 1927. (5 100 mots.)**

1928 385 .113 (.44)  
Chronique des transports. n° 10, 25 mai, p. 2.  
Les résultats de l'exploitation de la Compagnie des  
Chemins de fer de l'Est en 1927. (1 750 mots.)

1928 385. (09.3 (.44)  
Chronique des transports, n° 10, 25 mai, p. 6.  
La restauration des Chemins de fer français depuis  
l'armistice. (1 300 mots.)

### Génie civil. (Paris.)

1928 621 .331 (.44)  
Génie civil, n° 2388, 19 mai, p. 477.  
L'usine d'Ivry-port, de l'électricité de la Seine. Ins-  
tallation de distillation de l'eau d'alimentation. (2 400  
mots & fig.)

1928 621 .6 (01)  
Génie civil, n° 2388, 19 mai, p. 491.  
BATICLE (E.). — Le calcul et la construction des  
ponts en « bow-string ». (750 mots & fig.)

1928 621 .116 & 669  
Génie civil, n° 2389, 26 mai, p. 507.  
CHARPY (G.). — La métallurgie et la construction  
des chaudières. (3 400 mots & fig.)

1928 721 .9 (.460)  
Génie civil, n° 2389, 26 mai, p. 519.  
GAILLARD. — Un type nouveau de réservoir d'eau,  
en béton armé. (400 mots & fig.)

1928 621 .335 (.44)  
Génie civil, n° 2389, 26 mai, p. 522.  
Nouvelle locomotive électrique à grande vitesse des  
Chemins de fer P. L. M., construite par la Société Oer-  
likon. (450 mots & fig.)

1928 721 .9  
Génie civil, n° 2390, 2 juin, p. 537.  
Les planchers en béton armé, sans nervures, dits  
planchers-champignons. (2 600 mots & fig.)

1928 62. (01)  
Génie civil, n° 2391, 9 juin, p. 562.  
WAHL. — Détermination algébrique et comparaison  
des efforts dans un arc à deux articulations et dans un  
arc encastré, de type particulier. (1 500 mots & fig.)

1928 721 .4 & 721 .9  
Génie civil, n° 2391, 9 juin, p. 564.  
LOSSIER (H.). — Coupes et voûtes en béton armé.  
(1 900 mots & fig.)

1928 62. (01)  
Génie civil, n° 2392, 16 juin, p. 581.  
DEWULF (N.). — Le tracé des coudes coniques des  
conduites en tôles rivées. (3 100 mots & fig.)

### La Science et la Vie. (Paris.)

1928 656 .254 (.4)  
La Science et la Vie, mai, p. 437.  
FOURNIER (L.). — Le téléphone automatique.  
Paris. (2 300 mots & fig.)

1928 625 .13 (.460 + .)  
La Science et la Vie, mai, p. 443.  
CAËL (J.). — La construction d'un tunnel sous  
le détroit de Gibraltar est-elle possible? (1 800 mots  
& fig.)

1928 62. (0)  
La Science et la Vie, juin, p. 491.  
LABADIÉ (J.). — Grâce à la nouvelle méthode p  
toélastique, on peut maintenant rendre visibles les t  
sions intérieures des matériaux. (5 800 mots & fig.)

### Revue générale des chemins de fer. (Paris.)

1928 621 .138.5 (.4)  
Revue générale des chemins de fer, juin, p. 427.  
PEZEU (J.). — Réparation des foyers en acier a  
Compagnie d'Orléans. (4 600 mots & fig.)

1928 625 .143  
Revue générale des chemins de fer, juin, p. 437.  
COUILLIÉ (G.) & CADIS (L.). — L'éclisse-chev  
(2 100 mots & fig.)

1928 625 .143.3 & 625 .2  
Revue générale des chemins de fer, juin, p. 472.  
Graisseurs de boudins de roues employés actuelleme  
sur les chemins de fer français. (1 800 mots & fig.)

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1928 385 .3  
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COLSON (C.). — Les impôts sur les transports et  
majorations des tarifs de chemins de fer. (10 700 mots)

Revue universelle des mines, de la métallurgie  
des travaux publics, des sciences et des arts  
appliqués à l'industrie. (Liège.)

1928 625 .143  
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FOURMARIER (P. J.). — Essai d'interprétation  
cheminement du rail. (2 500 mots & fig.)

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#### Archiv für Eisenbahnwesen. (Berlin.)

1927 385. (01 (.436 + .497.1) & 385. (09  
(.436 + .497 .)

Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt. S. 118  
REMY. — Sandsakbahn und Donau-Adriabahn, ein  
Kapitel aus der Vorgeschichte des Weltkriegs. (20 000  
Wörter & Abb.)



1927 385 .15 (.43)  
Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt. S. 1248.  
HAEFFNER (K. E.). — **Aufbau und rechtliche Natur**  
der Deutschen Reichsbahn-Gesellschaft. (14 000 Wörter.)

1927 385 .585 (.43) & 385 .586 (.43)  
Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt. S. 1351.  
HONOLD. — Der **Unterrichts- und Bildungsausschuss**  
der Deutschen Reichsbahn. (7 600 Wörter.)

1927 313 .385 (.43)  
Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt. S. 1378  
Die **Eisenbahnen des Deutschen Reichs**. (400 Wörter  
& Tabellen.)

1927 385 .113 (.481)  
Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt. S. 1396.  
Die **Eisenbahnen in Norwegen in den Jahren 1924-25**  
und 1925-26. (Tabellen.)

1927 385 .113 (.44)  
Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt. S. 1405.  
Die **Betriebsergebnisse der fünf grossen französischen**  
**Eisenbahngesellschaften im Jahr 1925**. (Tabellen.)

1927 385 .113 (.497.2)  
Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt. S. 1415.  
Die **bulgarischen Staatseisenbahnen im Rechnungs-**  
**Jahr 1924/25**. (Tabellen.)

1927 385. (09.1) (.56)  
Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt. S. 1429.  
Das **türkische Eisenbahnnetz im Jahr 1925**. (Tabel-  
len.)

1927 656 .256.3 (.431)  
Archiv für Eisenbahnwesen, Heft 6, Nov.-Dez., S. 1680.  
BOTHE (A.). — Die **selbsttätige Signalanlage** der  
Berliner Hoch- und Untergrundbahnen. (15 300 Wörter  
& Abb.)

1927 385 .113 (.436)  
Archiv für Eisenbahnwesen, Heft 6, Nov.-Dez., S. 1728.  
Die **Eisenbahnen in der tschecoslowakischen Repu-**  
**lik nach dem Stand vom Jahr 1924**. (2 000 Wörter &  
Tabellen.)

1927 385 .113 (.438)  
Archiv für Eisenbahnwesen, Heft 6, Nov.-Dez., S. 1743.  
ROESNER (E.). — Die **polnischen Staatseisenbahnen**  
den Jahren 1924 und 1925. (500 Wörter & Tabellen.)

1927 385 .113 (.593)  
Archiv für Eisenbahnwesen, Heft 6, Nov.-Dez., S. 1756.  
Die **Kgl. Siamesischen Staatsbahnen in der Zeit vom**  
**April 1925 bis 31. März 1926**. (300 Wörter & Tabel-  
len.)

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1928 621 .33 (.481)  
Elektrotechnische Zeitschrift, Heft 20, 17. Mai, S. 763.  
**Elektrisierung der Hovedbahn (Norwegen)**. (600 Wör-  
& Abb.)

1928 621 .33 (.43)  
Elektrotechnische Zeitschrift, Heft 24, 14. Juni, S. 887.  
WECHMANN (W.). — Die **Elektrisierung** der Deuts-  
chen Reichsbahn unter besonderer Berücksichtigung der  
Berliner Stadt- und Vorortbahnen. (7 700 Wörter &  
Abb.)

1928 621 .331 (.43) & 621 .332 (.43)  
Elektrotechnische Zeitschrift, Heft 24, 14. Juni, S. 903.  
REICHEL (W.). — **Gleichstromversorgung** der Deuts-  
chen Reichsbahn, insbesondere durch Gleichrichteran-  
lagen. (10 000 Wörter, 1 Tabelle & Abb.)

1928 621 .335 (.43)  
Elektrotechnische Zeitschrift, Heft 24, 14. Juni, S. 918.  
MATTHIES (H.). — **Neue Wechselstrom-Triebwagen**  
für Schnellverkehr. (1 900 Wörter & Abb.)

1928 656 .256.3 (.431)  
Elektrotechnische Zeitschrift, Heft 24, 14. Juni, S. 921.  
Das **selbsttätige Signalsystem** der Berliner Stadt-  
bahn. (2 900 Wörter & Abb.)

#### Glaser's Annalen. (Berlin.)

1928 625 .616  
Glaser's Annalen, Heft 10, 15. Mai, S. 156.  
BECHLER (A.). — **Triebwagenzug für den Betrieb**  
auf den Klein- und Strassenbahnen. (1 100 Wörter &  
Abb.)

1928 656 .256.3 (.431)  
Glaser's Annalen, Heft 11, 1. Juni, S. 161.  
GLÄSEL. — Die **selbsttätige Zugsicherung** für die  
Berliner Stadtbahn. (6 300 Wörter & Abb.)

1928 625 .246 (.43)  
Glaser's Annalen, Heft 12, 15. Juni, S. 175.  
**Austauschbarkeit von Nietverbindungen**. (4 200 Wör-  
ter & Abb.)

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1928 621 .132.8 (.42)  
Engineer, No. 3775, May 18, p. 551.  
A geared steam rail car. (1 800 words, 1 table & fig.)

1928 621 .133 (.42)  
Engineer, No. 3776, May 25, p. 581.  
**Oil burners for Kitson-Still locomotive**. (1 000 words  
& fig.)

1928 656 .211.7 (.71)  
Engineer, No. 3777, June 1, p. 594.  
The new Canadian Pacific liner « Duchess of Bed-  
ford ». (2 200 words & fig.)

1928 621 .94 (.42)  
Engineer, No. 3777, June 1, p. 608.  
**Double and single head hole and expansion-link**  
**grinding machines**. (1 000 words & fig.)

- 1928 62. (06 (08 (.42)  
Engineer, No. 3778, June 8, p. 624.  
The Institution of Civil Engineers, centenary celebrations. (14 600 words.)
- 1928 656 .28 (0 (.42)  
Engineer, No. 3778, June 8, p. 632.  
Railway accidents. (1 300 words.)
- 1928 526 (.42)  
Engineer, No. 3779, June 15, p. 657.  
A new type of levelling and stadia staff. (800 words & fig.)
- 1928 621 .13 (0  
Engineer, No. 3779, June 15, p. 661.  
Locomotive developments. (1 500 words.)
- 1928 656 .213 (.42)  
Engineer, No. 3779, June 15, p. 665.  
New quay at the Albert Edward dock on the Tyne. (1 400 words & fig.)
- 1928 621 .136 (.42)  
Engineer, No. 3779, June 15, p. 667.  
London & North Eastern Ry. corridor tender. (Drawings.)
- 1928 621 .131.3 (.42)  
Engineer, No. 3779, June 15, p. 668.  
Comparative tests of locomotives with 180 and 220 lb. pressure. (500 words & 3 tables.)
- 1928 656 .222 (.44)  
Engineer, No. 3779, June 15, p. 669.  
The summer train services in France. (600 words & tables.)

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- 1928 625 .143.2 & 669 .1  
Engineering, No. 3253, May 18, p. 617.  
SWINDEN (T.). — Chromium-steel rails. (3 500 words & 2 tables.)
- 1928 656. (06 (.42)  
Engineering, No. 3254, May 25, p. 634.  
The Mersey dock estate. Its management and principal trades. (4 200 words.)
- 1928 621 .94 (.42)  
Engineering, No. 3254, May 25, p. 637.  
Axle re-grinding machine for rolling stock. (1 600 words.)
- 1928 625 .26 (.42)  
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Rolling-stock overhaul works of the London Underground Railways. (3 200 words & fig.)
- 1928 621 .33 (.68)  
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LYDAIL (F.). — The electrification of the Pietermaritzburg Glencoe section of the South African Railways. (3 200 words & fig.)

- 1928 621 .335 (.7  
Engineering, No. 3255, June 1, p. 664.  
Electric locomotives for operating on three voltage (1 200 words.)
- 1928 656 .211.7 (.7  
Engineering, No. 3255, June 1, p. 675.  
The Canadian Pacific Railway Company's liner « D chess of Bedford ». (2 500 words & fig.)
- 1928 621 .39 & 669  
Engineering, No. 3255, June 1, p. 682.  
WOODWARD (W. E.). — The rapid normalising overstrained steel. (2 100 words, 7 tables & fig.)
- 1928 665 .882 (.4  
Engineering, No. 3256, June 8, p. 694.  
OUDET (J.). — The utilisation of liquid oxygen in railway workshops. (1 500 words & fig.)
- 1928 625 .143  
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American Institute of Mining and Metallurgical Engineers. Abstract: Railway steels. (850 words.)
- 1928 62. (06 (08 (.4  
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- 1928 62. (06 (08 (.4  
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The Institution of Civil Engineers' engineering conference, 6th July 1928. (18 800 words.)
- 1928 62. (01 & 6  
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The failure of wrought iron chains. (2 200 words.)
- 1928 621 .1  
Engineering, No. 3257, June 15, p. 742.  
Fuel economy problems. (2 000 words.)
- Engineering News-Record. (New-York.)
- 1928 621 .392 (.73) & 725 .4 (.7  
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Large factory structure built by arc welding. (23 words & fig.)
- 1928 624 .7 (.7  
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HIRSCHTHAL (M.). — Lackawanna makes cost line change to reduce bridge delays. (4 500 words & fig.)
- 1928 624 .1 (.7  
Engineering News-Record, No. 21, May 24, p. 819.  
MOISSEIFF (L. S.). — Designing the towers of the Hudson River bridge. (2 400 words & fig.)
- 1928 621 .392 (.7  
Engineering News-Record, No. 23, June 7, p. 882.  
Welded construction for large shop building. (29 words & fig.)

1928 693  
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BATES (P. H.). — Modern cements. A study of the characteristics of the hydraulic cements of today. (3 300 words & 1 table.)

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1928 625 .26 (.73)  
Electric Railway Journal, No. 18, May 5, p. 729.  
SQUIER (C. W.). — Truck repairs put on a high-speed basis. (2 100 words & fig.)

1928 625 .174 (.73)  
Electric Railway Journal, No. 18, May 5, p. 737.  
Fighting snow on rapid transit lines. (700 words & fig.)

1928 621 .85 (.73) & 625 .26 (.73)  
Electric Railway Journal, No. 20, May 19, p. 805.  
SQUIER (C. W.). — Wheel, gear and axle maintenance in Brooklyn. (3 100 words & fig.)

1928 621 .333 (.73)  
Electric Railway Journal, No. 20, May 19, p. 815.  
NAQUIN (A. J.). — Railway motor load testing set. (500 words & fig.)

1928 625 .235 (.73)  
Electric Railway Journal, No. 20, May 19, p. 817.  
Ventilated room for spray painting. (1 000 words, 1 table & fig.)

1928 625 .6 (06) (08)  
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International Association meets at Rome. (4 800 words, 2 tables & fig.)

1928 621 .338 (.73)  
Electric Railway Journal, No. 22, June 2, p. 888.  
GORDON (Ch.). — Pittsburgh seeks more popular street car. (3 800 words & fig.)

1928 621 .39 (.73) & 625 .234 (.73)  
Electric Railway Journal, No. 22, June 2, p. 905.  
BAUMGARTEN (A. W.). — Further analysis of car heating costs. (3 000 words & tables.)

1928 625 .62 (.4)  
Electric Railway Journal, No. 22, June 2, p. 910.  
BACQUEYRISSE (L.). — One-man cars and buses in Europe. (2 800 words & fig.)

1928 625 .614 (.4)  
Electric Railway Journal, No. 22, June 2, p. 912.  
VAN NOORBEECK (E.). — Improvements in rail and ties. (1 400 words, 1 table & fig.)

1928 656 .2 (.73)  
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BLACKHALL (J. R.). — Graphs assist in lowering costs and improving service. (1 600 words, 1 table & fig.)

1928 625 .216 (.43)  
Electric Railway Journal, No. 23, June 9, p. 933.  
MATTERSDORF (W.). — What happens to an anti-climber. (600 words & fig.)

1928 621 .33 (.43)  
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HEALY (K. T.). — Many German railroads are electrified. (2 900 words, tables & fig.)

1928 621 .33 (.73)  
Electric Railway Journal, No. 23, June 9, p. 942.  
Electrical equipment for Broad Street subway cars. (1 900 words & fig.)

1928 621 .333 (.73) & 621 .85 (.73)  
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SQUIER (C. W.). — Careful overhauling of motors prevents service interruptions. (1 800 words & fig.)

1928 625 .14 (.434)  
Electric Railway Journal, No. 24, June 16, p. 979.  
SCHWANTER (R.). — Cologne lays tracks without ties. (1 200 words & fig.)

1928 621 .335 & 621 .89  
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AUSTRY (W. H.). — Oil-sealed housings for railway motors. (1 500 words & fig.)

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1928 621 .132.5 (.43)  
Loc. Ry. Carriage & Wagon Review, No. 429, May 15, p. 137.  
Recent non-standard German locomotives. (1 300 words, 1 table & fig.)

1928 621 .133.3  
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Systems of heat insulation for locomotive boilers. (1 900 words & fig.)

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1928 625 .111  
Mechanical Engineering, June, p. 441.  
ORROK (G. A.). — High-pressure steam boilers. (5 800 words, 1 table & fig.)

1928 621 .138.2 (.73)  
Mechanical Engineering, June, p. 454.  
McCAUSLAND (J. R.). — Fuel handling and ash disposal. (4 600 words, 1 table & fig.)

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1928 625 .1 (.45)  
Modern Transport, No. 479, May 19, p. 5.  
Construction of new direct railway from Bologna to Florence. (1 800 words & fig.)



- 1928 385. (09.1 (.51)  
Modern Transport, No. 479, May 19, p. 7.  
Railway chaos in China. (1 200 words & fig.)
- 1928 621 .13 (0  
Modern Transport, No. 479, May 19, p. 10.  
Design of locomotives. Some constructional errors.  
(1 400 words & fig.)
- 1928 625 .4 (.42)  
Modern Transport, No. 479, Liverpool Congress Section  
No. 2, May 19, p. 6.  
First electrically-operated elevated railway in the  
world: The Liverpool Overhead. (1 600 words, 1 table  
& fig.)
- 1928 621 .335 (.54)  
Modern Transport, No. 480, May 26, p. 8.  
Shunting locomotives for India. (1 000 words & fig.)
- 1928 347 .763 (.42), 656 .1 (.42) & 656 .2 (.42)  
Modern Transport, No. 480, May 26, p. 9.  
Railways and road transport. Companies' bills before  
the Joint Committee. (5 500 words.)
- 1928 621 .7 & 657  
Modern Transport, No. 480, May 26, p. 21.  
FOWLER (Sir Henry). — Costing in railway shops.  
(1 700 words & portrait.)
- 1928 656 .256.3 (.42)  
Modern Transport, No. 480, Liverpool Congress Section,  
May 26, p. 5.  
The electric railway under the Mersey. A notable  
achievement in power signalling and automatic point  
operation. (3 200 words & fig.)
- 1928 656 .253 (.68)  
Modern Transport, No. 481, June 2, p. 3.  
Day colour light signalling on the South African  
Railways. (3 000 words & fig.)
- 1928 385. (0 (.56)  
Modern Transport, No. 482, June 9, p. 3.  
DUDLEY STAMP (L.). — Railway construction in  
Turkey. (1 800 words & fig.)
- 1928 625 .1 (0  
Modern Transport, No. 482, June 9, p. 6.  
BROWN (C. J.). — Developments in railway engi-  
neering. The choice of materials. (1 600 words.)
- 1928 625 .1 (0 & 621 .33  
Modern Transport, No. 482, June 9, p. 7.  
ELLSON (G.) & COOPER (A. R.). — Railway design  
and maintenance. Effects of electrification. (1 600  
words.)
- 1928 621 .13. (0 & 621 .4 (0  
Modern Transport, No. 482, June 9, p. 11.  
FOWLER (Sir Henry). — Steam and internal com-  
bustion locomotives. Recent developments on British  
and Foreign railways. (1 700 words & 1 table.)

- 1928 621 .4. (0  
Modern Transport, No. 482, June 9, p. 15.  
The internal combustion engine. Consideration  
regarding light high-speed and heavy types. (2 800  
words.)
- 1928 656 .1 (.73) & 656 .2 (.73  
Modern Transport, No. 482, June 9, p. 18.  
Road and rail in U. S. A. An instructive example of  
co-ordination. (2 200 words & fig.)
- 1928 621 .132.3 (.43) & 621 .132.5 (.43  
Modern Transport, No. 483, June 16, p. 3.  
Standard locomotives on the German Railways. Two  
cylinder types to supersede three-cylinder models  
(1 900 words & fig.)
- 1928 656 .222 (.43  
Modern Transport, No. 483, June 16, p. 5.  
New Continental Pullman service. The « Rheingold »  
Express. (1 700 words & fig.)
- 1928 621 .33 (0  
Modern Transport, No. 483, June 16, p. 7.  
Railway electrification. Its development and value  
(2 900 words.)
- 1928 656 .2 (.485  
Modern Transport, No. 483, June 16, p. 10.  
Road transport in Norway. Services operated over  
difficult country. (1 500 words & fig.)
- Proceedings, American Society of Civil Engineers  
(New-York.)
- 1928 721 .5  
Proceed. Amer. Soc. Civil Eng., May, part 1, p. 1435.  
HICKERSON (T. F.). — A proposed formula for  
columns. (2 400 words & fig.)
- 1928 624 .5  
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TIMOSHENKO (S.). — The stiffness of suspension  
bridges. (3 200 words & fig.)
- 1928 627  
Proceed. Amer. Soc. Civil Eng., May, part 3, p. 1.  
Report on arch dam investigation. (75 000 words,  
43 tables & fig.)
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(London.)
- 1928 531  
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abstracts No. 35, p. 13.  
Measurement, and measuring- and recording-instru-  
ments. (5 700 words.)

1928 62. (01 & 691  
Proceed., Institut. of Civil Eng., April, Engineering  
abstracts No. 35, p. 24.  
Engineering materials. (14 500 words.)

1928 624, 69 & 721  
Proceed., Institut. of Civil Eng., April, Engineering  
abstracts No. 35, p. 50.  
Structures. (14 000 words.)

1928 621  
Proceed., Institut. of Civil Eng., April, Engineering  
abstracts No. 35, p. 77.  
Transportation, transmission, and distribution of  
energy. (31 000 words.)

1928 621  
Proceed., Institut. of Civil Eng., April, Engineering  
abstracts No. 35, p. 131.  
Mechanical processes, appliances, and apparatus.  
(14 000 words.)

1928 62 & 656  
Proceed., Institut. of Civil Eng., April, Engineering  
abstracts No. 35, p. 148.  
Specialized engineering practice. (38 000 words &  
fig.)

### Proceedings, Institution of Railway Signal Engineers. (Manchester.)

1927-1928 656 .25 (.42 + .44)  
Proceed., Institut. Ry. Signal Eng., September to  
January, p. 178.  
ROOT (J.). — Route signalling. (14 000 words & fig.)

1927-1928 656 .25 (01  
Proceed., Institut. Ry. Signal Eng., September to  
January, p. 220.  
BOOK (G. H.). — Automatic and power signalling  
systems. (14 500 words & fig.)

1927-1928 656 .25 (01  
Proceed., Institut. Ry. Signal Eng., September to  
January, p. 261.  
Methods of holding the road by mechanical or elec-  
tric means, or both, during the passage of trains.  
(14 000 words & fig.)

### Railway Age. (New-York.)

1928 625 .258 (.73) & 656 .259 (.73)  
Railway Age, No. 18, May 5, p. 1035.  
Road costs cut 17 per cent. (1 800 words, 3 tables  
& fig.)

1928 621 .139 (.73), 625 .27 (.73) & 725 .33 (.73)  
Railway Age, No. 18, May 5, p. 1037.  
Missouri-Kansas-Texas has model oil house. (900  
words & fig.)

1928 625 .142.2 (.73) & 691 (.73)  
Railway Age, No. 18, May 5, p. 1039.  
Adequate supply of cross ties in sight indefinitely.  
(2 000 words & fig.)

1928 656 .257 (.73)  
Railway Age, No. 18, May 5, p. 1043.  
Consolidation of three interlockings cuts operating  
costs. (1 200 words & fig.)

1928 313. 385 (.3)  
Railway Age, No. 18, May 5, p. 1045.  
Railway mileage of the World 1924-1925. (Table.)

1928 656 .212 (.73) & 725 .32 (.73)  
Railway Age, No. 18, May 5, p. 1053.  
Missouri-Kansas-Texas has new freight terminal at  
Houston, Texas. (1 100 words & fig.)

1928 625 .253. (06 (.73)  
Railway Age, No. 18, May 5, p. 1055.  
Air Brake Association meets at Detroit. (5 600  
words.)

1928 625 .214 (.73)  
Railway Age, No. 18, May 5, p. 1060.  
UNGER (J. S.). — Results of using copper bearing  
steel in freight cars. (2 500 words & 3 tables.)

1928 621 .138 (.73) & 656 .222 (.73)  
Railway Age, No. 20, May 19, p. 1142.  
Four terminals closed by extending locomotive runs.  
(1 200 words, 3 tables & fig.)

1928 656 .256.3 (.73)  
Railway Age, No. 20, May, 19, p. 1145.  
Automatic interlocking saves 50 stops a day. (2 200  
words & fig.)

1928 621 .33  
Railway Age, No. 20, May 19, p. 1147.  
Power for electric traction. (2 400 words.)

1928 621 .133.1 (06 (.73)  
Railway Age, No. 20, May 19, p. 1149.  
Fuel men look into the future. (4 400 words.)

1928 621 .133.1 (.73)  
Railway Age, No. 20, May 19, p. 1153.  
BRUCE (A. W.). — The locomotive as a factor in  
fuel economy. (3 400 words & fig.)

1928 725 .35 (.73)  
Railway Age, No. 20, May 19, p. 1156.  
Portability keynote of the new supply house on  
Southern Pacific. (1 500 words & fig.)

1928 614 .8 (06 (.73)  
Railway Age, No. 20, May 19, p. 1159.  
Safety section meets in Buffalo. (4 000 words.)

1928 656 .223.2 (.73)  
 Railway Age, No. 21, Section one, May 26, p. 1188.  
 Scientific car handling cuts per diem expense. (3 000 words, 1 table & fig.)

1928 625 .1 (.73)  
 Railway Age, No. 21, Section one, May 26, p. 1193.  
 Heavy work features line relocation on the Pennsylvania. (2 700 words & fig.)

1928 385. (06 (08 (.73)  
 Railway Age, No. 21, Section one, May 26, p. 1199.  
 Short Line Association meets in Mexico City. (3 200 words & fig.)

1928 625 .232 (.73)  
 Railway Age, No. 21, Section one, May 26, p. 1203.  
 New Haven builds dining car for wrecking crew. (900 words & fig.)

1928 621 .132.3 (.73)  
 Railway Age, No. 21, Section one, May 26, p. 1207.  
 Bangor & Aroostook purchases 4-6-2 locomotives. (700 words & fig.)

1928 621 .139 & 625 .27  
 Railway Age, No. 21, Section one, May 26, p. 1209.  
 A'HEARN (F. M.). — The consumer's interest in the railway supply problem. (2 100 words & fig.)

1928 656 .1 (.73)  
 Railway Age, No. 21, Section two, May 26, p. 1241.  
 Santa Fe tours prove popular. (3 000 words & fig.)

1928 621 .43 (.73)  
 Railway Age, No. 21, Section two, May 26, p. 1245.  
 BROEGE (R. J.). — The automotive full-Diesel engine. (2 300 words, 1 table & fig.)

1928 656 .261 (.73)  
 Railway Age, No. 21, Section two, May 26, p. 1253.  
 Dispatching system key to efficient operation. (2 000 words & fig.)

1928 621 .87 (.73) & 656 .212.6 (.73)  
 Railway Age, No. 22, June 2, p. 1268.  
 Western Maryland enlarges its tidewater coal loading facilities at Baltimore, Md. (2 200 words & fig.)

1928 625 .27 (.73) & 725 .35 (.73)  
 Railway Age, No. 22, June 2, p. 1271.  
 New oil and paint store to save 50 per cent. (750 words & fig.)

1928 621 .335 (.73) & 621 .4 (.73)  
 Railway Age, No. 22, June 2, p. 1273.  
 GILLILAN (P. M.). — Gas-electric motor cars as applied to steam railroads. (1 900 words & fig.)

1928 385 .32 (.73)  
 Railway Age, No. 22, June 2, p. 1276.  
 MEYER (B. H.). — The Interstate Commerce Commission and its work. (3 200 words.)

1928 621 .132.3 (.73)  
 Railway Age, No. 22, June 2, p. 1279.  
 Santa Fe 4-8-4 type meets expectations. (3 600 words, 3 tables & fig.)

1928 656 .261 (.73)  
 Railway Age, No. 22, June 2, p. 1286.  
 Hearing on trucking in New York. (7 900 words.)

1928 656 .256.3 (.73)  
 Railway Age, No. 22, June 2, p. 1291.  
 Automatic signals reduce operating costs on do track. (800 words, 1 table & fig.)

1928 651 (.73)  
 Railway Age, No. 22, June 2, p. 1293.  
 MALLOY (C. C.). — Office work speeded up by of equipment. (1 400 words & fig.)

1928 621 .335 (.71) & 621 .4 (.73)  
 Railway Age, No. 23, June 9, p. 1319.  
 BROOKS (C. E.). — Oil-electric motive power on National. (4 600 words, 3 tables & fig.)

1928 621 .133.2 (.73)  
 Railway Age, No. 23, June 9, p. 1324.  
 Texas & Pacific tests special firebox for oil-burn locomotives. (1 700 words & fig.)

1928 385 .517 (.73)  
 Railway Age, No. 23, June 9, p. 1327.  
 Maintenance of men shows profit. (1 800 words & fig.)

1928 621 .133.7 (.73) & 725 .33 (.73)  
 Railway Age, No. 23, June 9, p. 1328.  
 New water supply facilities effect economies on Southern. (3 400 words & fig.)

1928 621 .139 (.71), 625 .18 (.71) & 625 .27 (.73)  
 Railway Age, No. 23, June 9, p. 1333.  
 TAYLOR (H. L.). — Canadian National reorganizes its purchasing methods. (3 300 words & fig.)

1928 656 .261 (.73)  
 Railway Age, No. 23, June 9, p. 1339.  
 Hearing on trucking in New York. (2 700 words.)

1928 385. (09.1 (.73)  
 Railway Age, No. 23, June 9, p. 1342.  
 Post-earthquake progress in Japan. (900 words, 2 tables & fig.)

1928 625 .258 (.73) & 656 .259 (.73)  
 Railway Age, No. 24, June 16, p. 1371.  
 Car retarders reduce cost of yard operation on folk & Western. (1 800 words & fig.)

1928 621 .134 & 621 .135.7  
 Railway Age, No. 24, June 16, p. 1375.  
 WOODARD (W. E.). — Locomotive designs to reduce maintenance. (2 600 words & fig.)



1928 656 .24 (06 (.73)  
 Railway Age, No. 24, June 16, p. 1379.  
 Attendance at claim meeting exceeds previous years.  
 300 words & fig.)

1928 625 .144 (.73) & 625 .17 (.73)  
 Railway Age, No. 24, June 16, p. 1383.  
 HALE (H. E.). — Determining the labor cost of  
 backlaying and surfacing. (4 000 words & fig.)

1928 621 .139 (.73), 625 .18 (.73) & 625 .26 (.73)  
 Railway Age, No. 24, June 16, p. 1392.  
 Railway purchases of supplies and equipment in 1927.  
 500 words & 4 tables.)

1928 656 .283 (.73)  
 Railway Age, No. 24, June 16, p. 1393.  
 Report on Danville, Ky., Accident. (1 200 words.)

1928 621 .335 (.73) & 621 .4 (.73)  
 Railway Age, No. 24, June 16, p. 1395.  
 FREEMAN (N. L.). — Reading to use triple-unit  
 electric rail car. (2 000 words & fig.)

1928 621 .139 (.73), 625 .18 (.73) & 625 .27 (.73)  
 Railway Age, No. 24, June 16, p. 1399.  
 Railway material stocks lower in 1927. (1 200 words,  
 tables & fig.)

1928 656 .261 (.73)  
 Railway Age, No. 24, June 16, p. 1402.  
 Hearing on trucking in New York. (4 900 words.)

### Railway Engineer. (London.)

1928 621 .333 (.43)  
 Railway Engineer, June, p. 201.  
 COLLIVER (C. W.). — The Schön-Krupp single-phase  
 traction motor. (1 100 words & fig.)

1928 621 .132.8 (.42)  
 Railway Engineer, June, p. 203.  
 New Sentinel-Cammell geared rail car. (1 600 words  
 & fig.)

1928 621 .33 (.82 + .83)  
 Railway Engineer, June, p. 212.  
 Electrification of the Transandine Ry. (1 000 words  
 & fig.)

1928 621 .335 (.42) & 621 .43 (.42)  
 Railway Engineer, June, p. 215.  
 Diesel-electric rail motor train, London Midland &  
 Scottish Ry. (2 000 words & fig.)

1928 621 .7 (.66)  
 Railway Engineer, June, p. 219.  
 Railway workshops and equipment, Nigerian Ry.  
 200 words & fig.)

1928 656 .256.2 (.945).  
 Railway Engineer, June, p. 223.  
 Remote control of points, Victorian Government Rys.  
 (1 500 words & fig.)

1928 669  
 Railway Engineer, June, p. 229.  
 Metal cutting by oxygen jet. (700 words & fig.)

### Railway Engineering & Maintenance. (Chicago.)

1928 625 .17 (.73)  
 Railway Engineering & Maintenance, May, p. 197.  
 Savings increase under unit cost system. (1 300 words,  
 1 table & fig.)

1928 695 (.73) & 725 .33 (.73)  
 Railway Engineering & Maintenance, May, p. 199.  
 Laminated roofs for roundhouses. (1 000 words &  
 fig.)

1928 656 .284 (.73)  
 Railway Engineering & Maintenance, May, p. 201.  
 Southern Pacific among sufferers from St. Francis  
 dam disaster. (700 words & fig.)

1928 625 .142.2 (.73) & 691 (.73)  
 Railway Engineering & Maintenance, May, p. 205.  
 Tie producers see no shortage. (3 600 words & fig.)

1928 625 .1 (.73)  
 Railway Engineering & Maintenance, May, p. 208.  
 How an ocean-going railroad is maintained. (2 800  
 words & fig.)

1928 625 .142.3 (.73)  
 Railway Engineering & Maintenance, June, p. 240.  
 Delaware & Hudson goes into scrap rail cross tie  
 production. (2 800 words & fig.)

1928 625 .13 (.73)  
 Railway Engineering & Maintenance, June, p. 244.  
 Erect 92-ton slabs with derricks. (1 000 words &  
 fig.)

1928 625 .144.4 (.73)  
 Railway Engineering & Maintenance, June, p. 245.  
 ALBERTS (N. F.). — Surfacing track when laying  
 new rail. (1 700 words.)

1928 621 .133.7 (.73) & 725 .33 (.73)  
 Railway Engineering & Maintenance, June, p. 247.  
 Southern makes important water supply improve-  
 ments. (4 400 words & fig.)

1928 625 .162 (.73) & 625 .8 (.73)  
 Railway Engineering & Maintenance, June, p. 253.  
 HILLMAN (F. W.). — Highway crossing construc-  
 tion imposes many problems. (3 400 words & fig.)

1928 625 .144.4 (.73)  
 Railway Engineering & Maintenance, June, p. 262.  
 Burlington adopts electric tools. (1 100 words.)

### Railway Gazette. (London.)

1928 621 .132.8 (.82)  
 Railway Gazette, No. 19, May 11, p. 643.  
 New Garratt locomotives for the Argentine. (700 words & fig.)

1928 621 .33 (.54)  
 Railway Gazette, No. 19, May 11, p. 647.  
 Bombay suburban electrification. (2 000 words & fig.)

1928 656 .261 (.42)  
 Railway Gazette, No. 19, May 11, p. 650.  
 Demountable bodies for motor lorries and motor tractors in London & North Eastern service. (800 words & fig.)

1928 656 .237 (.54)  
 Railway Gazette, No. 20, May 18, p. 674.  
 Indian railway accountancy. (1 800 words.)

1928 621 .132.3 (.91)  
 Railway Gazette, No. 20, May 18, p. 678.  
 New three-cylinder 4-6-2 type locomotives for the Federated Malay States Railways (metre gauge). (450 words & fig.)

1928 656 .253 (.42)  
 Railway Gazette, No. 20, May 18, p. 680.  
 Optical route-indicating signals. (700 words & fig.)

1928 621 .96 (.42) & 621 .98 (.42)  
 Railway Gazette, No. 20, May 18, p. 681.  
 Combined plate splitting shears and punch for railway workshops. (600 words & fig.)

1928 621 .132.6 (.43)  
 Railway Gazette, No. 20, May 18, p. 682.  
 New 2-6-2 mixed-traffic locomotives for German Railways. (500 words & fig.)

1928 621 .132.8 (.42)  
 Railway Gazette, No. 20, May 18, p. 683.  
 Geared Sentinel-Cammell rail car for the London & North Eastern Ry. (1 400 words & fig.)

1928 621 .132.8 (.68)  
 Railway Gazette, No. 20, May 18, p. 686.  
 Garratt passenger locomotive for the South African Railways. (400 words & fig.)

1928 656 .213 (.42)  
 Railway Gazette, No. 21, May 25, p. 710.  
 Avonmouth docks extension, port of Bristol. (1 300 words & fig.)

1928 621 .9 (.4)  
 Railway Gazette, No. 21, May 25, p. 712.  
 A special lathe for locomotive shops. (1 000 words & fig.)

1928 656 .06 (.08)  
 Railway Gazette, No. 21, May 25, p. 715.  
 Institute of Transport Congress. Liverpool, May 19, 1928. (1 500 words.)

1928 625 .243 (.4)  
 Railway Gazette, No. 21, May 25, p. 718.  
 « General utility » vans for the Southern Railway (600 words & fig.)

1928 625 .1 (.4)  
 Railway Gazette, No. 22, June 1, p. 742.  
 The Rome-Naples direct line. (1 700 words & fig.)

1928 621 .133.7 (.4)  
 Railway Gazette, No. 22, June 1, p. 748.  
 A new feed-water heater and pump for locomotive. (900 words & fig.)

1928 621 .52  
 Railway Gazette, No. 22, June 1, p. 750.  
 Electric arc welding. (600 words & fig.)

1928 656 .257 (.6)  
 Railway Gazette, No. 22, June 1, p. 751.  
 Composite direct and double-wire lever frame. (3 words & fig.)

1928 62. .06 (.4)  
 Railway Gazette, No. 23, June 8, p. 770.  
 Charter centenary celebration, engineering conferences and « James Forrest » lecture, 4 June 1928. The Institution of Civil Engineers. (5 200 words & 2 tables.)

1928 621 .133  
 Railway Gazette, No. 23, June 8, p. 775.  
 The A. C. F. I. feed-water heater. (750 words & fig.)

1928 656 .1 (.94)  
 Railway Gazette, No. 23, June 8, p. 778.  
 South Australian Railways and road transport. (15 words & fig.)

1928 656 .211.6 (.42) & 656 .26 (.4)  
 Railway Gazette, No. 23, June 8, p. 782.  
 Road motor equipment on British Railways, 1927. (300 words & 1 table.)

1928 621 .33 (.4)  
 Railway Gazette, No. 24, June 15, p. 804.  
 Further electrification on the Southern Ry. (19 words & fig.)

1928 625 .243 (.8)  
 Railway Gazette, No. 24, June 15, p. 806.  
 New goods wagons for Buenos Ayres Great Southern Ry. (300 words & fig.)

1928 625 .243 (.485)  
 Railway Gazette, No. 24, June 15, p. 807.  
 Railway wagons with collapsible roofs, Swedish State  
 Rys. (900 words & fig.)

1928 621 .33 (.68)  
 Railway Gazette, No. 24, June 15, p. 809.  
 Electrification of the Pietermaritzburg-Glencoe sec-  
 tion of the South African Rys. (3 500 words, 1 table  
 & fig.)

1928 621 .13 (09 (.42)  
 Railway Gazette, No. 24, June 15, p. 817.  
 A century of locomotive design. (250 words & fig.)

### Railway Magazine. (London.)

1928 621 .335 & 621 .43  
 Railway Magazine, June, p. 423.  
 Oil engines for rail cars and locomotives. (4 600 words  
 & fig.)

1928 656 .222.1 (.42)  
 Railway Magazine, June, p. 460.  
 400-mile non-stop runs by « The Royal Scot »  
 expresses, London Midland & Scottish Railway. (200  
 words & fig.)

1928 656 .222.1 (.42)  
 Railway Magazine, June, p. 461.  
 Inaugural London (King's Cross) — Edinburgh  
 (Waverley) non-stop runs, London & North Eastern  
 Railway. (1 800 words & fig.)

1928 656 .222.1 (.42)  
 Railway Magazine, June, p. 468.  
 ALLEN (C. J.). — British locomotive practice and  
 performance. (5 900 words, 2 tables & fig.)

### Railway Mechanical Engineer. (New-York.)

1928 621 .333 (.73) & 621 .4 (.73)  
 Railway Mechanical Engineer, May, p. 250.  
 Gas-electric unit for rail cars. (2 400 words & fig.)

1928 625 .251  
 Railway Mechanical Engineer, May, p. 259.  
 TERWILLIGER (G. E.). — Calculating the stopping  
 distances of trains. (2 000 words.)

1928 621 .134.1 (.73)  
 Railway Mechanical Engineer, May, p. 262.  
 Application of crosshead pins on the St. Louis-San  
 Francisco. (250 words & fig.)

1928 625 .245 (.73)  
 Railway Mechanical Engineer, May, p. 263.  
 Bangor & Aroostook builds own dynamometer car.  
 (900 words & fig.)

1928 625 .245 (.73)  
 Railway Mechanical Engineer, May, p. 267.  
 Cast steel underframe ore car. (1 300 words & fig.)

1928 621 .39 (.73) & 625 .232 (.73)  
 Railway Mechanical Engineer, May, p. 273.  
 MARSHALL (W. C.). — Ice boxes being eliminated  
 on Milwaukee diners. (1 900 words & fig.)

1928 621 .138.1 (.73) & 725 .33 (.73)  
 Railway Mechanical Engineer, May, p. 285.  
 Boston & Albany enginehouse at Worcester, Mass.  
 (2 000 words & fig.)

1928 621 .139 (.73) & 625 .27 (.73)  
 Railway Mechanical Engineer, June, p. 305.  
 How railroads purchase shop equipment. (1 600 words  
 & fig.)

1928 621 .85 (.73)  
 Railway Mechanical Engineer, June, p. 307.  
 WETZEL (N. F.). — Keeping machine tools up to  
 date. (4 100 words, 1 table & fig.)

1928 621 .85 (.73)  
 Railway Mechanical Engineer, June, p. 312.  
 Keeping the plant up to date. (3 300 words & fig.)

1928 625 .253. (06 (.73)  
 Railway Mechanical Engineer, June, p. 323.  
 Thirty-fifth air brake convention held at Detroit.  
 (6 400 words & fig.)

1928 621 .13 (06 (.73)  
 Railway Mechanical Engineer, June, p. 329.  
 Fuel men discuss future objectives. (6 200 words &  
 fig.)

### Railway Signaling. (Chicago.)

1928 625 .258 (.73) & 656 .259 (.73)  
 Railway Signaling, May, p. 163.  
 ELSWORTH (R. B.). — Car retarders on New York  
 Central. (3 000 words & fig.)

1928 656 .256.3 (.73)  
 Railway Signaling, May, p. 167.  
 Chicago Great Western installs new automatic si-  
 gnals. (1 200 words & fig.)

1928 656 .254 (.73)  
 Railway Signaling, May, p. 169.  
 Dispatcher signaling system operates through sleet  
 storm. (1 000 words & fig.)

1928 621 .3 (.73) & 656 .25 (.73)  
 Railway Signaling, May, p. 171.  
 Automatic signaling substations insure continuous  
 power supply. (2 400 words & fig.)



1928 621 .3 (.73) & 656 .25 (.73)  
 Railway Signaling, May, p. 174.  
 KING (C. F., Jr.). — 100-cycle power distribution  
 for code train stop. (2 000 words & fig.)

1928 656 .257 (.73)  
 Railway Signaling, May, p. 180.  
 Three interlockings consolidated. (1 800 words & fig.)

1928 656 .253 (.73)  
 Railway Signaling, June, p. 203.  
 Big four installs 60 miles of color light signals.  
 (1 800 words & fig.)

1928 656 .257 (.73)  
 Railway Signaling, June, p. 206.  
 Centralized control on Burlington saves \$ 16 200 a  
 year. (2 500 words & fig.)

1928 656 .256.3 (.73) & 656 .258 (.73)  
 Railway Signaling, June, p. 209.  
 Chicago & Eastern Illinois installs automatic inter-  
 locker at main line crossing. (4 000 words & fig.)

1928 621 .31 (.73) & 656 .256.3 (.73)  
 Railway Signaling, June, p. 214.  
 FULLER (R. A.). — Automatic substations on Penn-  
 sylvania provide 100-cycle service. (850 words & fig.)

1928 656 .254 (.73)  
 Railway Signaling, June, p. 215.  
 Highway signals at interlocking plant. (500 words  
 & fig.)

1928 537 .4 (.73) & 656 .256.3 (.73)  
 Railway Signaling, June, p. 216.  
 BECK (E.). — A study of lightning protection.  
 (2 700 words & fig.)

1928 656 .162 (.42)  
 Railway Signaling, June, p. 219.  
 Trains governed by crossing gate position. (800  
 words.)

1928 656 .257 (.73)  
 Railway Signaling, June, p. 220.  
 MOLLOY (J. H.). — Rock Island completes 33-lever  
 electric interlocker. (2 200 words & fig.)

#### South African Railways and Harbours Magazine. (Johannesburg.)

1928 385. (09.1 (.945)  
 South African Rys. & Harbours Mag., April, p. 619.  
 PRINCE (H. H. N.). — The Railways of Victoria,  
 Australia. (2 500 words & fig.)

1928 656 .213 (.42)  
 South African Rys. & Harbours Mag., April, p. 637.  
 The ports of the Great Western Railway. (1 900  
 words & fig.)

1928 385. (09.1 (.945)  
 South African Rys. & Harbours Mag., June, p. 941.  
 The Railways of Western Australia. (3 600 wo  
 & fig.)

1928 385. (09.1 (.945)  
 South African Rys. & Harbours Mag., June, p. 981.  
 THOMPSON (W.). — The civilising influence  
 transportation in a province of China. The South M  
 churia Railway. (2 200 words & fig.)

#### University of Illinois Bulletin. (Urbana.)

1927 669  
 University of Illinois Bulletin, No. 176, May, p. 1.  
 MOORE (H. F.) & HOWARD (F. C.). — A meta  
 graphic study of the path of fatigue failure in copp  
 (2 600 words & fig.)

#### In Spanish.

#### Gaceta de los Caminos de hierro (Madrid.)

1928 621 .33 (.49)  
 Gaceta de los Caminos de hierro, n° 3547, 1° de ma  
 p. 146.  
 La electrificación de los ferrocarriles suizos y  
 resultados mas notables. (1 200 palabras.)

#### Revista de Obras Públicas. (Madrid.)

1928 621 .33 (.49)  
 Revista de Obras Públicas, n° 10, 15 de mayo, p. 1.  
 JIMÉNEZ ONTIVEROS (F.). — Electrificación  
 ferrocarriles. — Estudios sobre su conveniencia eco  
 mica. (2 500 palabras & fig.)

1928 624 .32 (.49)  
 Revista de Obras Públicas, n° 11, 1° de junio, p. 200.  
 MENDIZABAL (D.). — Montaje de los nuevos to  
 mos sobre el rio Guadalepe. (1 200 palabras & fig.)

1928 621 .33 (.49)  
 Revista de Obras Públicas, n° 12, 15 de junio, p. 225.  
 JOSÉ LUCIA (P.). — Algunas breves observacio  
 a los artículos del señor Ontiveros sobre la convenien  
 económica de la electrificación de ferrocarriles. (1  
 palabras.)

#### In Italian.

#### Annali dei lavori pubblici. (Roma.)

1928 62. (03.1 (.945)  
 Annali dei lavori pubblici, marzo, p. 226.  
 BELLUZZI (O.). — Sul calcolo dei telai soggett  
 forze e a coppie spaziali. (3 300 parole & fig.)

928  
nali dei lavori pubblici, marzo, p. 253.  
l'applicazione del freno continuo ai treni merci.  
000 parole & fig.)

625 .251

vista delle Comunicazioni ferroviarie. (Roma.)

928  
delle Comunic. ferrov., n° 10, 15 maggio, p. 13.  
MALTESE (S.). — Attività commerciali diverse di  
linee ferrovie moderne. (3 300 parole, 1 tabella & fig.)

656 (.4)

928  
delle Comunic. ferrov., n° 12, 15 giugno, p. 16.  
la razionalizzazione delle Ferrovie Federali Svizzere.  
200 parole.)

**In Dutch.**

De Ingenieur. (Den Haag.)

928  
Ingenieur, N° 23, 9 Juni, p. B. 147.  
RANX (C.). — De tunnel als oeververbinding.  
000 woorden & fig.)

625 .13 (.73)

1928  
De Ingenieur, N° 23, 9 Juni, p. B. 160.

DE WIT (A. N. P.). — Montage van een brug van  
3 × 50 m. over de Bogowontorivier in de S. S. lijn  
Koetoardjo-Djokja op Java. (1 200 woorden & fig.)

624 .32 (.92)

De Locomotief. (Amsterdam.)

1928  
De Locomotief, N° 20, 16 Mei, p. 154.

Electrificatie van spoorwegen. (6 400 woorden.)

621 .33

1928  
De Locomotief, N° 24, 13 Juni, p. 185.

Het Internationale Tramwegcongres te Rome, Mei  
1928. (2 500 woorden & fig.)

625 .6 (06)

**In Portuguese.**

Revista das Estradas de ferro. (Rio de Janeiro.)

1928  
Revista das Estradas de ferro, n° 69, 30 de maio, p. 286.  
Os ferrocarris no vertice das velocidades. (3 400 pa-  
lavras & cuadros.)

656 .222.1





# MONTHLY BIBLIOGRAPHY OF RAILWAYS <sup>(1)</sup>

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General secretary of the Permanent Commission of the International Railway Congress Association.

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[ 016 .385 (02) ]

## I. — BOOKS.

### In French.

1928 621 .131.3 (.47)

COMITE SCIENTIFIQUE TECHNIQUE DU COMMISSARIAT DU PEUPLE DES VOIES DE COMMUNICATION DE L'U. R. S. S.

Bulletin n° 61: Résultats des expériences des locomotives du type 1-3-1 et du 2-3-1, par Grinenko (R. P.).  
Bulletin n° 62: Résultats des expériences de la locomotive du type 1-4-0 de la série III, par Grinenko (R. P.).

Moscou, U. R. S. S. « Transpetchate » Commissariat du Peuple des Voies de Communication.

1926 621 .132.8 (.56)

OLIVET (G.) & FAVREL (H.), ingénieurs des arts et manufactures.

Les voies de transport entre Beyrouth et Damas de 1863 à nos jours. Leurs locomotives à roue dentée.

Paris (8°), Revue Universelle des Transports, 4, rue du Rocher. (19 × 27.5 cm.), 16 pages avec 5 fig. dans le texte et 6 planches hors texte. (Prix: 10 francs.)

1927 625 .62 (.44)

LAHIN (Lucien A. H.), ingénieur des arts et manufactures.

Les voitures motrices légères pour tramways électriques.

Paris (8°), Revue Universelle des Transports, 4, rue du Rocher. (19 × 27.5 cm.), 15 pages avec 27 fig. dans le texte. (Prix: 6 francs.)

1925 625 .62 (.44)

LENTE (R.), ingénieur en chef des Réseaux de Tramways de Marseille.

Le Réseau des Tramways de Marseille.

Paris (8°), « Revue Universelle des Transports », rue du Rocher. (24 × 31.5 cm.), 15 pages avec 17 figures et 6 graphiques dans le texte. (Prix: fr. 8.50.)

1926

621 .335 (.494)

ZEHNDER-SPOERRY (R.), docteur-ingénieur, directeur de la Compagnie du Chemin de fer Montreux-Oberland bernois.

Nouvelles voitures automotrices électriques de la Compagnie du Chemin de fer Montreux-Oberland bernois.

Paris (8°), « Revue Universelle des Transports », 4, rue du Rocher. (24 × 31.5 cm.), 8 pages avec 8 fig. dans le texte. (Prix: fr. 3.50.)

### In German.

1928

62. (01)

BECKER (E.) & FÖPPL (O.).

Dauerversuche zur Bestimmung der Festigkeitseigenschaften, Beziehungen zwischen Baustoffdämpfung und Verformungsgeschwindigkeit.

Leipzig. Verlag von Johann Ambrosius Barth. 4°. iv, 28 Seiten mit 39 Abb. & 12 Zahlentaf. (Preis: 4.50 Rm.)

1928

656 .256.3 (.43)

BOTHE (A.).

Die selbsttätige Signalanlage der Berliner Hoch- und Untergrundbahn.

Leipzig. Verlag von Johann Ambrosius Barth. 4°. x-164 Seiten mit 116 Textabb. und 18 Tafeln. (Preis geb.: 32 Rm.)

1928

621 .43

HAUSFELDER (L.).

Die kompressorlose Dieselmachine.

Berlin W. 10. Verlag von Krayn. 382 Seiten mit 256 Abb. (Preis: 20 Rm.)

1928

621 .94

HEGELE (A.).

Die Drehbank.

Leipzig. Verlag von Johann Ambrosius Barth. 8°. 259 Seiten mit 290 Abb., Skizzen u. Zeichn. im Text. u. 49 Tafeln, nebst zahlr. eingedr. Berechnungstab. (Preis: 6.50 Rm.)

(1) The numbers placed over the title of each book are those of the decimal classification proposed by the Railway Congress conjointly with the Office Bibliographique International, of Brussels. (See « Bibliographical Decimal Classification as applied to Railway Science », by WEISSENBRUCH in the number for November, 1897, of the *Bulletin of the International Railway Congress*, p. 1509).

1928 625 .13  
**HILGARD (K. E.).**  
 Studienbericht über die Abdichtung von wasserdurchlässigem Fels und Mauerwerk in Eisenbahntunnels.  
 Berlin, W. 9. Verlag von Julius Springer, 16 Seiten.  
 (Preis : 1.20 Rm.)

1928 624 .2 (01  
**HORT (Wilhelm) & HÜLSENKAMP (Fritz).**

Untersuchung von Spannungs- und Schwingungsmessen für Brücken. Bericht über d. Ergebnisse d. Wettbewerbs d. Deutschen Reichsbahn-Gesellschaft zur Erlangung e. Spannungs- u. e. Schwingungsmessers f. d. Bestimmung d. dynam. Beanspruchung. eiserner Brücken. (Vorw., Gottwald, Schaper.)

Mailand (Italien). Libreria internazionale Ulrico Hoepli, Galleria De Cristoforis, 4<sup>o</sup>, 58 Seiten mit 75 Abb. (Preis : 33 Lire.)

1928 721 .4  
**KÖGLER (F.).**

Gewölbetabellen. Vereinfachungen für Entwurf u. Berechnung statisch bestimmter u. unbestimmter Gewölbe.

Leipzig. Verlag von Johann Ambrosius Barth, 8<sup>o</sup>, 2., erweiterte Auflage. viii-104 Seiten mit 29 Textabb. (Preis : 7.50 Rm.)

1928 385 .586 (.43)  
**SCHWARZE (B.).**

Die Personalausbildung bei der Deutschen Reichsbahn.

Leipzig. Verlag von Johann Ambrosius Barth, 8<sup>o</sup>, 742 Seiten mit 92 Abb., 23 Tafeln u. d. Amtl. Lehrplänen. (Preis geb. : 20 Rm.)

1928 625 .151 (.431)  
**WULFERT (G.).**

Die Weichen der Deutschen Reichsbahn Gruppe Preussen. Nebst Lagepläne. Manuadr. Hauptw. xvii-293 Seiten mit Abb. u. Fig. 8<sup>o</sup> u. (20.5 × 29 cm.). Lagepläne der Weichen u. Kreuzungen mit Schienen. Form 8a. 11-21 Seiten mit Fig. 8<sup>o</sup> u. (20.5 × 29 cm.) Leipzig. Verlag von Johann Ambrosius Barth. (Preis : 5.30 Rm.)

**In English.**

1928 621 .1 (0  
**ANDRADE (E. N. da C.), D. Sc., Ph. D.**  
 Engines.

London, W. C. 2. G. Bell & Sons Ltd., York House, Portugal Street, Kingsway. (5 × 7 1/2 inches), 267 pages. (Price : 7 sh. 6 d. net.)

1928 621 .31  
**BRADFIELD (R.) & JOHN (W. J.).**  
 Telephone and power transmission.  
 London. Chapman and Hall, Ltd. (Price : 21 sh. net.)

1928 669. (0  
**BUCHANAN (John F.).**  
 Brassfounder's alloys. A practical handbook.  
 London, E. and F. N. Spon, Ltd, 2nd edition. (Price 10 sh. 6 d. net.)

1928 016 .385 (.7  
 Canadian Pacific Railway Company. Trial bibliography. Chronological bibliography of material by and about the C. P. R. as found in a number of Canadian and U. S. libraries.  
 Washington, D. C. Published by Library, Bureau of Railway Economics. 94 pages.

1928 385. (09.3 (.4  
**CONROY (J. C.).**  
 A history of railways in Ireland.  
 London, E. C. 4., Longmans, Green & Co. Ltd., Paternoster Row. (2 × 6 1/2 × 9 inches), 386 pages. (Price 15 sh. net.)

1928 625 .147  
**HUGHES (F. S.), B. Sc., Assoc. M. I. C. E.**  
 Note on steel sleeper design.  
 Calcutta, Government of India, Publication Branch Technical Paper No. 260. 17 pages and diagrams (Price : 1 sh. 6 d.)

1928 6  
**JACOBS (Fred. B.).**  
 The abrasive handbook.  
 Cleveland, Penton Publishing Co. Cloth (6 × 9 inches), 547 pages, diagrams. (Price : \$5.00.)

1928 656 .234 (.4  
**LISSENDEN (Geo. B.).**  
 Railway passengers and their luggage.  
 London, W. C. 2. The Solicitors' Law Stationery Society, Ltd., 22, Chancery Lane, London, W. C. 2. 114 pages. (Price : 5 sh. net.)

1928 621 .3  
**PURDAY (H. F. P.).**  
 Diesel engine design (third edition).  
 London. Constable & Co. (6 × 9 inches), 360 pages, illus., diagrams, tables. (Price : 21 sh.)

1928 656 .28 (01 (.4  
 Railways. Accidents. Returns of accidents and casualties as reported by the several Railway Companies in Great Britain during 1927.  
 London, P. S. King & Son, Ltd., Orchard House, 14, Great Smith Street, Westminster. (Price : 1 sh.)

1928 656 .24 (.4  
**ROBERTSON & KENNEDY.**  
 Railway and canal traffic cases. Vol. XIX.  
 London, W. C. 2. Sweet & Maxwell, Ltd., 2 and Chancery Lane. 248 pages. (Price : £2-2-0.)

- 1928 654. (02)  
**STONE (A. E.).**  
 A text-book of telegraphy, theoretical and practical.  
 London, Macmillan & Company, Ltd. (Price : 20 sh.  
 net.)
- 1928 691 (42)  
 The deterioration of structures in sea water. Eighth  
 (interim) report of the Committee of the Institution  
 of Civil Engineers. Department of Scientific and Indus-  
 trial Research.  
 London, H. M. Stationery Office. 75 pages and plates.  
 Price : 3 sh. net.)
- [ 016 .585. (05 )

## II. — PERIODICALS.

- In French.**
- Annales des Mines. (Paris.)**
- 1928 536  
 Annales des Mines, avril, p. 201.  
**LÉVÊQUE (A.).** — Les lois de la transmission de  
 chaleur par convection. (17 500 mots & fig.)
- Arts et Métiers. (Paris.)**
- 1928 669  
 Arts et Métiers, juillet, p. 262.  
**BARAT (R.).** — Déformations dues à la trempe dans  
 des pièces cimentées et trempées. (2 000 mots & fig.)
- 1928 621 .116  
 Arts et Métiers, juillet, p. 271.  
**DURIN.** — Tubes à fumée de chaudières. Notes sur  
 l'entretien et la réparation des faisceaux tubulaires.  
 (3 400 mots & fig.)
- 1928 621 .116  
 Arts et Métiers, juillet, p. 275.  
**ASTRUC (M.).** — La sécurité dans les chaudières à  
 vapeur. Etude sur deux indicateurs de niveau à distance  
 sur une masse flottante imperforable et équilibrée. (1 900 mots  
 & fig.)
- Bulletin de l'Association internationale  
 permanente des Congrès de la route. (Paris.)**
- 1928 656 .1 & 656 .2  
 Bull. de l'Ass<sup>on</sup> intern. perm. des Congrès de la route,  
 mai-juin, p. 127.  
 La route et le rail. (3 000 mots.)

- Bulletin de la Société d'encouragement  
 pour l'industrie nationale. (Paris.)**
- 1928 62. (01 & 621 .9  
 Bull. de la Société d'enc. pour l'ind. nat., juin, p. 483.  
**GUILLERY (R.).** — Machine universelle pour l'essai  
 des fontes à la dureté, à la flexion statique et au cisail-  
 ement, et machine à essayer les métaux en feuilles à  
 emboutissage et à la traction. (4 400 mots & fig.)

- In Italian.**
- 1928 62. (01)  
**BACH (C.) & BAUMANN (R.).**  
 Teoria, prove ed applicazioni tecniche della elasticità  
 e resistenza dei materiali. Prima traduzione italiana  
 (sulla nona edizione originale) a cura degli ingegneri  
 Carlo ROSSI e Luigi SANTARELLA.  
 Milano, Ulrico Hoepli, editore. In-8° gr., xvi-528 pa-  
 gine con incise 27 tavole. (Prezzo : Lire 75.)

- Bulletin de la Société des ingénieurs civils  
 de France. (Paris.)**
- 1928 721 .1  
 Bull. de la Soc. des ing. c. de France, mars-avril, p. 312.  
**VAN ITERSOM.** — Résistance du terrain à la charge  
 des constructions. Théorie des fondations. (6 000 mots  
 & fig.)
- 1928 536 & 621 .116  
 Bull. de la Soc. des ing. c. de France, mars-avril, p. 341.  
**ROSZAK (Ch.) & VÉRON (M.).** — Les lois de la  
 transmission de la chaleur et la conception des chau-  
 dières modernes. (10 500 mots & fig.)

- Bulletin technique  
 de la Suisse romande. (Vevey.)**
- 1928 385 .21 (.44)  
 Bull. techn. de la Suisse romande, n° 12, 16 juin, p. 146.  
**BOREL (Ch.).** — Comparaison entre les prix de  
 transport par chemin de fer et par voies navigables.  
 (2 200 mots.)
- 1928 625 .251  
 Bull. techn. de la Suisse romande, n° 14, 14 juil., p. 169.  
 Le freinage continu des trains de marchandises  
 (3 500 mots.)

- Bulletin des transports internationaux  
 par chemins de fer. (Berne.)**
- 1928 656 .225  
 Bull. des transp. intern. par ch. de fer, juin, p. 214.  
 Lettres de voiture à ordre. (1 100 mots.)
- 1928 656 .222.1 (.4 + .7)  
 Bull. des transp. intern. par ch. de fer, juin, p. 217.  
 Les vitesses des trains. (1 800 mots.)
- 1928 313 .385 (.497.2)  
 Bull. des transp. intern. par ch. de fer, juin, p. 238.  
 Statistique des chemins de fer de l'Etat bulgare.  
 (300 mots & tableau.)



1928 313 .385 (.439)  
Bull. des transp. intern. par ch. de fer, juillet, p. 279.  
Statistique des chemins de fer royaux de l'Etat hongrois pour les années 1923-1924 et 1924-1925. (450 mots & tableau.)

### Bulletin de l'Union internationale des chemins de fer (Paris).

1928 385 .113 (.45)  
Bull. de l'Union intern. des ch. de fer, juin, p. 222.  
Les Chemins de fer de l'Etat italien pendant l'exercice 1926-1927. (5 500 mots & tableaux.)

### Chronique des transports. (Paris.)

1928 385 .113 (.44)  
Chronique des transports, n° 11, 10 juin, p. 2.  
Les résultats de l'exploitation de la Compagnie des chemins de fer du Midi en 1927. (3 700 mots.)

1928 385 .113 (.44)  
Chronique des transports, n° 12, 25 juin, p. 2.  
Les résultats de l'exploitation de la Compagnie des Chemins de fer du Nord en 1927. (3 400 mots.)

1928 656 .286  
Chronique des transports, n° 13, 10 juillet, p. 16.  
La sécurité sur route et par voie ferrée. (500 mots.)

1928 625 .232 (.44)  
Chronique des transports, n° 13, 10 juillet, p. 17.  
Les nouvelles voitures de luxe du Réseau du Midi. (350 mots.)

1928 385 .112 (.44)  
Chronique des transports, n° 13, 10 juillet, p. 18.  
La répartition des dépenses d'établissement des lignes nouvelles. (1 500 mots.)

### Génie civil. (Paris.)

1928 656 .211 (.44)  
Génie civil, n° 2393, 23 juin, p. 601.  
PETIT (L.). — La nouvelle gare de Rouen (rive droite). (5 300 mots & fig.)

1928 621 .332 (.73)  
Génie civil, n° 2393, 23 juin, p. 618.  
La ligne électrique à 66 000 volts surmontant des voies ferrées, de la Philadelphia Electric Co. (E.-U.). (450 mots & fig.)

1928 624 .51 (.73)  
Génie civil, n° 2394, 30 juin, p. 629.  
CAUFORIER (P.). — Le pont suspendu de 1 067 mètres de portée sur l'Hudson, à New-York. (4 700 mots & fig.)

1928 621 .33 (.73)  
Génie civil, n° 2395, 7 juillet, p. 16.  
CAUFORIER (P.). — L'électrification du Virginia Ry. (1 900 mots & fig.)

1928 625 .143.  
Génie civil, n° 2395, 7 juillet, p. 18.  
La fabrication de rails sains. (2 500 mots.)

1928 62. (0)  
Génie civil, n° 2396, 14 juillet, p. 41.  
L'essai de traction des métaux. (1 900 mots & fig.)

### L'Industrie des voies ferrées et des transports automobiles. (Paris.)

1928 656 .1 (.494) & 656 .2 (.494)  
L'Ind. voies ferrées et transp. autom., mai, p. 125.  
BORDAS (F.). — Les chemins de fer suisses et la concurrence automobile. (3 400 mots.)

1928 625 .151 & 625 .63  
L'Ind. voies ferrées et transp. autom., mai, p. 127.  
SAMBOURG (L.). — Notes sur la manière de desservir les voies d'un dépôt de tramways au moyen d'appareils intercalés les uns dans les autres et dénommés « peignes ». (2 700 mots & fig.)

1928 625 .210  
L'Ind. voies ferrées et transp. autom., mai, p. 367.  
BARRAUD. — Note sur un attelage rigide et semi-automatique entre motrice électrique et remorque de tramway. (1 400 mots & fig.)

1928 625 .252  
L'Ind. voies ferrées et transp. autom., mai, p. 389.  
CALLOT. — Note sur les sabots de frein. (2 100 mots & 3 tableaux & fig.)

1928 625 .174 (.44) & 625 .62 (.44)  
L'Ind. voies ferrées et transp. autom., juin, p. 161.  
ROUBAUD (A.). — Le déblaiement des neiges sur les voies du Réseau des Transports en commun de la Région Parisienne. (4 000 mots & fig.)

1928 656 .23 (.44) & 656 .62 (.44)  
L'Ind. voies ferrées et transp. autom., juin, p. 410.  
PLANCHOT. — Influence de l'augmentation des tarifs sur le nombre de voyageurs transportés et sur les recettes totales. (4 700 mots & fig.)

### La Science et la Vie. (Paris.)

1928 625 .4 (.42)  
La Science et la Vie, juillet, p. 41.  
FOURNIER (L.). — Un chemin de fer électrique souterrain assure à Londres la circulation des sacs postaux. (2 600 mots & fig.)

Les Chemins de fer et les Tramways. (Paris.)

- 1928 656 .222.1  
s Ch. de fer et les Tramw., juillet, p. 154.  
BOURGAIN (A.). — Le contrôle automatique de la  
marche des trains par les appareils Rodolausse. (4 400  
mots & fig.)
- 1928 621 .331 (.494)  
s Ch. de fer et les Tramw., juillet, p. 159.  
La sous-station automatique de Fribourg. (3 300 mots  
& fig.)
- 1928 625 .215  
s Ch. de fer et les Tramw., juillet, p. 163.  
Bogie avec chemin de roulement pour l'appui de la  
sisse. (850 mots & fig.)
- 1928 625 .172  
s Ch. de fer et les Tramw., juillet, p. 167.  
Dispositif calibreur de voies ferrées et indicateur de  
niveaux. (1 900 mots & fig.)

Revue générale des chemins de fer. (Paris.)

- 1928 385. (09.3 (.44)  
Revue générale des chemins de fer, juillet, p. 5.  
Situation en 1878 des Grands Réseaux de chemins de  
fer français. (4 500 mots.)
- 1928 385. (09.3 (.44)  
Revue générale des chemins de fer, juillet, p. 12.  
Le développement des Grands Réseaux français jus-  
qu'à la guerre. (6 000 mots.)
- 1928 385. (09.3 (.44)  
Revue générale des chemins de fer, juillet, p. 22.  
La guerre et les crises corrélatives. (5 900 mots.)
- 1928 385. (09.3 (.44)  
Revue générale des chemins de fer, juillet, p. 31.  
Le nouveau régime des Grands Réseaux français d'in-  
térêt général et leur régime antérieur. (3 400 mots.)
- 1928 385. (09.3 (.44)  
Revue générale des chemins de fer, juillet, p. 37.  
La renaissance et le développement des Grands Ré-  
seaux français depuis les crises de 1919-1920. (25 000  
mots & fig.)
- 1928 385. (01 (.6 + .56 + .59)  
Revue générale des chemins de fer, juillet, p. 88.  
Les Chemins de fer des colonies, protectorats et terri-  
toires sous mandat français. (33 000 mots.)
- 1928 385. (06  
Revue générale des chemins de fer, juillet, p. 136.  
Les organismes internationaux de chemins de fer.  
(400 mots.)

- 1928 62. (01 (.45)  
Revue générale des chemins de fer, juillet, p. 162.  
L'essai de résilience pour le matériel roulant des  
Chemins de fer de l'Etat italien. (1 200 mots & 1 ta-  
bleau.)

- 1928 625 .215 (.43)  
Revue générale des chemins de fer, juillet, p. 166.  
Bogie Görlitz. (750 mots & fig.)

Revue universelle des mines, de la métallurgie,  
des travaux publics, des sciences et des arts  
appliqués à l'industrie. (Liège.)

- 1928 669  
Revue universelle des Mines, n° 2, 15 juillet, p. 63.  
THYSSEN (H.) & BOURDOUXHE (J.). — Appareil  
simple pour la détermination de la résistance aux cor-  
rosions des alliages. (1 200 mots, 1 tableau & fig.)

In German.

Elektrotechnische Zeitschrift. (Berlin)

- 1928 621 .33 (.73)  
Elektrotechnische Zeitschrift, Heft 27, 5 Juli, S. 1005.  
KAMMERER (A.). — Die Zugbeeinflussungssysteme  
bei den Eisenbahngesellschaften der V. S. Amerika.  
(4 000 Wörter, 1 Tafel & Abb.)
- 1928 621 .3 & 625 .143.5  
Elektrotechnische Zeitschrift, Heft 28, 12. Juli, S. 1053.  
Elektrische Maschine zur Befestigung von Schienen-  
fussplatten. (450 Wörter & Abb.)

Glasers Annalen. (Berlin.)

- 1928 625 .143. (0 & 625 .212  
Glasers Annalen, Heft 1, 1 Juli, S. 1.  
LORENZ (R.). — Schiene und Rad. (5 800 Wörter  
& Abb.)
- 1928 621 .133.1  
Glasers Annalen, Heft 2, 15. Juli, S. 13.  
de GRAHL. — Neuzeitliche Kohlenveredlung auf che-  
mischem Wege. (2 400 Wörter & Abb.)
- 1928 621 .13 & 621 .4  
Glasers Annalen, Heft 2, 15. Juli, S. 20.  
ACHILLES (F.). — Lokomotiven mit Antrieb durch  
Oelmotor und Dampfmaschine. (2 600 Wörter, 2 Tabel-  
len & Abb.)
- 1928 621 .132.3 (.43)  
Glasers Annalen, Heft 2, 15. Juli, S. 25.  
1 C. Heissdampf- Personenzug-Lokomotive mit  
3 achsigem Tender. (300 Wörter & Abb.)

**In English.**

**Electric Railway Journal. (New-York.)**

1928 621 .338 (.73)  
Electric Railway Journal, No. 25, June 23, p. 1020.  
Osgood-Bradley develops new model sample car.  
(3500 words & fig.)

1928 385. (071.3 (.73)  
Electric Railway Journal, No. 26, June 30, p. 1065.  
Milwaukee builds practice track and road for instruction. (2 000 words & fig.)

1928 625 .26 (.73) & 725 .33 (.73)  
Electric Railway Journal, No. 26, June 30, p. 1068.  
PORTER (C. J.). — Car shop and garage is of latest design. (3 200 words, 6 tables & fig.)

1928 725 .33 (.73)  
Electric Railway Journal, No. 2, July 14, p. 45.  
JONAS (E. J.). — Cincinnati completes model car shop. (2 200 words & fig.)

1928 621 .33 (.492)  
Electric Railway Journal, No. 2, July 14, p. 50.  
Railway electrification in Holland. (450 words.)

1928 385 .585 (.73)  
Electric Railway Journal, No. 2, July 14, p. 53.  
LOVITT (J. L.). — Interesting the utility employee in education. (3 800 words & fig.)

**Engineer. (London.)**

1928 621 .31  
Engineer, No. 3780, June 22, p. 684.  
Metal rectifiers. (1 200 words & fig.)

1928 01  
Engineer, No. 3780, June 22, p. 685.  
BRADFORD (S. C.). — The Brussels classification. (2 200 words.)

1928 656 .28 (.68)  
Engineer, No. 3780, June 22, p. 689.  
Railway accidents in South Africa. (1 300 words.)

1928 62. (01  
Engineer, No. 3780, June 22, p. 696.  
A new hardness testing machine. (850 words & fig.)

1928 621 .134.2  
Engineer, No. 3781, June 29, p. 720.  
Caprotti valve gear. (1 700 words & fig.)

1928 621 .132.8 (.42)  
Engineer, No. 3781, June 29, p. 722.  
London & North-Eastern Railway — New steam coach. (700 words & fig.)

1928 656 .283 (.4)  
Engineer, No. 3782, July 6, p. 14.  
The Darlington railway accident. (800 words.)

**Engineering News-Record. (New-York.)**

1928 624 .63 (.7)  
Engineering News-Record, No. 1, July 5, p. 4.  
Concrete bridge construction on curve. (1 900 words & fig.)

1928 625 .143.2 & 625 .143  
Engineering News-Record, No. 1, July 5, p. 7.  
Endurance and other properties of rail steel investigated. (400 words.)

1928 624 .2 (.7)  
Engineering News-Record, No. 1, July 5, p. 16.  
Elements of the new-33-in. rolled structural section. (250 words, 1 table & fig.)

1928 62. (01 (06 (.7)  
Engineering News-Record, No. 1, July 5, p. 22.  
Research in materials distinguishes American Society for Testing Materials meeting. (7 000 words & fig.)

1928 624 .62 (.4)  
Engineering News-Record, No. 1, July 5, p. 28.  
Erecting a large steel arch bridge in England. (5 words & fig.)

1928 625 .1 (.7)  
Engineering News-Record, No. 2, July 12, p. 58.  
Work on Hudson Bay Railroad progressing rapidly. (1 200 words & fig.)

**Journal of the Institute of Transport. (London.)**

1928 656 .223.2 (.4)  
Journal of the Institute of Transport, June, p. 390.  
BATTY (T. E.). — Rolling stock problems. (62 words & fig.)

1928 656 .2  
Journal of the Institute of Transport, June, p. 414.  
PECORINI (R. R.). — Some applications of radio to the science of transport. (6 100 words.)

1928 656 .25  
Journal of the Institute of Transport, June, p. 422.  
THORROWGOOD (W. J.). — Some aspects of modern railway signalling. (4 600 words.)

1928 656. (06 (08 (.4)  
Journal of the Institute of Transport, July, p. 440.  
Proceedings of the Institute of Transport, Ninth Session, 1927-1928. (60 000 words.)



# Locomotive Railway Carriage & Wagon Review. (London.)

1928 621 .132.3 (.82)  
Loc. Ry. Carriage & Wagon Review, 15 June, p. 173.  
Three-cylinder Pacific type express engines: Buenos  
Ayres & Pacific Ry. (750 words & fig.)

1928 621 .132.8 (.42)  
Loc. Ry. Carriage & Wagon Review, 15 June, p. 183.  
Sentinel-Cammell gear-driven rail cars, London &  
North Eastern Ry. (1 600 words & fig.)

1928 621 .133.2 (.43) & 621 .392 (.43)  
Loc. Ry. Carriage & Wagon Review, 15 June, p. 187.  
Welding of copper fireboxes. (2 000 words & fig.)

1928 621 .132 (.460)  
Loc. Ry. Carriage & Wagon Review, 14 July, p. 205.  
« Consolidation » locomotive Santander-Mediterranean  
Ry. (650 words & fig.)

1928 621 .132.6 (.42)  
Loc. Ry. Carriage & Wagon Review, 14 July, p. 207.  
ALLEN (A.). — The « Atkinson-Walker » steam  
locomotive. (2 000 words & fig.)

1928 621 .338 (.73)  
Loc. Ry. Carriage & Wagon Review, 14 July, p. 212.  
Articulated passenger car units. New York Rapid  
Transit Corporation. (700 words & fig.)

1928 621 .132.8 (.485)  
Loc. Ry. Carriage & Wagon Review, 14 July, p. 215.  
Motor-coach for the Kalmar-Berra Ry., Sweden.  
(2250 words & fig.)

1928 621 .132.3 (.436) & 621 .134.2 (.436)  
Loc. Ry. Carriage & Wagon Review, 14 July, p. 216.  
Austrian locomotives with Caprotti valve gear. (1 100  
words & fig.)

1928 656 .222.1 (.42)  
Loc. Ry. Carriage & Wagon Review, 14 July, p. 222.  
London Midland & Scottish Ry. locomotive « Royal  
Scot ». (1 500 words, 2 tables & fig.)

1928 621 .133.7 (.42)  
Loc. Ry. Carriage & Wagon Review, 14 July, p. 225.  
An improved locomotive feed-water heater and pump.  
(900 words & fig.)

1928 625 .251  
Loc. Ry. Carriage & Wagon Review, 14 July, p. 230.  
Improvements in continuous brakes. (1 400 words &  
fig.)

## London & North Eastern Railway Magazine. (London.)

1928 621 .85 (.42) & 725 .45 (.42)  
L. & N. E. Railway Magazine, June, p. 293.  
ROBERTSON (K. S.). — Coach building at York  
carriage works. (700 words & fig.)

1928 621 .136.1 (.42)  
L. & N. E. Railway Magazine, July, p. 342.  
EGGLESBAY (F. H.). — Building the corridor ten-  
ders. (850 words & fig.)

## Mechanical Engineering. (New-York.)

1928 621 .116 & 669 .1  
Mechanical Engineering, July, p. 523.  
PARR (S. W.) & STRAUB (F. G.). — The embrittle-  
ment of boiler plate. (5 000 words, 7 tables & fig.)

## Modern Transport. (London.)

1928 621 .33 (.45)  
Modern Transport, No. 484, June 23, p. 3.  
Railway electrification in Europe. — Conversion of  
the Italian State owned systems. (2 200 words & fig.)

1928 385 .11 (.43)  
Modern Transport, No. 484, June 23, p. 7.  
German Railway progress. (2 900 words & fig.)

1928 38  
Modern Transport, No. 484, June 23, p. 9.  
MANCE (H. O.). — Through communications. (1 500  
words & portrait.)

1928 621 .13 (06 (.42) & 621 .13 (.43)  
Modern Transport, No. 484, June 23, p. 10.  
Locomotive engineers' visit to Germany. (3 000 words  
& fig.)

1928 656 .211.4  
Modern Transport, No. 485, June 30, p. 2.  
Terminals. (1 100 words.)

1928 656 .211.4 (.44) & 725 .31 (.44)  
Modern Transport, No. 485, June 30, p. 3.  
Reconstruction of the Gare de l'Est. (2 000 words &  
fig.)

1928 656 (.496 + .56)  
Modern Transport, No. 485, June 30, p. 7.  
IKBAL ALI SHAH (Sirdar). — Glimpses of the Tur-  
kish transport system. (1 800 words & fig.)

1928 656 .1 (.43) & 656 .2 (.43)  
Modern Transport, No. 485, June 30, p. 20.  
Co-ordinated rail and road services. (1 500 words &  
fig.)

1928 625 .232 (.42)  
Modern Transport, No. 486, July 7, p. 3.  
All-steel coaches for « Queen of Scots » Pullman ser-  
vices. (2 100 words & fig.)

1928 621 .33 (.44)  
Modern Transport, No. 487, July 14, p. 3.  
Railway electrification in Europe. The Paris-Orleans  
Railway System. (3 000 words, 2 tables & fig.)

1928 656 .211.7 (.42)  
Modern Transport, No. 487, July 14, p. 8.  
Another Canadian Pacific cabin steamship « Duchess of Atholl » for transatlantic services. (800 words & fig.)

### Railway Age. (New-York.)

1928 625 .1 (.73)  
Railway Age, No. 26, June 30, p. 1495.  
Louisville & Nashville completes second track on Kentucky division. (3 300 words & fig.)

1928 625 .143.3  
Railway Age, No. 26, June 30, p. 1503.  
A gage for accurately measuring rail batter. (350 words & fig.)

1928 625 .232 (.73)  
Railway Age, No. 26, June 30, p. 1511.  
Burlington acquires modern lounge cars. (1 700 words & fig.)

1928 621 .132.8 & 621 .4  
Railway Age, No. 26, June 30, p. 1513.  
LEMP (H.). — Performance records of oil-engine locomotives. (2 500 words.)

1928 656 .223.2 (.73)  
Railway Age, No. 26, June 30, p. 1517.  
Cincinnati operating Committee promotes terminal efficiency. (2 300 words & 2 tables.)

1928 656 .24 (06 (.73)  
Railway Age, No. 26, June 30, p. 1520.  
Claim men meet at Omaha, Neb. (3 800 words & fig.)

1928 656 .212 (.73)  
Railway Age, No. 1, July 7, p. 5.  
Modern yards complete solution of Boston & Maine terminal problem. (5 800 words & fig.)

1928 656 .235.7 (.73)  
Railway Age, No. 1, July 7, p. 11.  
Handling perishables speedily. (3 000 words & fig.)

1928 621 .335 (.73) & 621 .43 (.73)  
Railway Age, No. 1, July 7, p. 17.  
Milwaukee tests Diesel rail car. (1 600 words & fig.)

1928 625 .258 (.73) & 656 .259 (.73)  
Railway Age, No. 1, July 7, p. 22.  
STERN (V. L.). — Economies of car retarders. (3 000 words & tables.)

1928 625 .245 (.73)  
Railway Age, No. 1, July 7, p. 31.  
The Young tank-car bottom-outlet valve. (450 words & fig.)

1928 51. (08 & 621 .133)  
Railway Age, No. 2, July 14, p. 72.  
Computer for determining the fuel value of coal. (500 words & fig.)

1928 625 .3  
Railway Age, No. 2, July 14, p. 51.  
Locomotive operation through long tunnels. (500 words.)

1928 621 .138.1 (.73) & 725 .33 (.73)  
Railway Age, No. 2, July 14, p. 54.  
Boston & Albany builds modern engine terminal at Worcester, Mass. (4 000 words & fig.)

1928 621 .134.1 (.73)  
Railway Age, No. 2, July 14, p. 59.  
Norfolk & Western applies power tender trucks for hump yard service. (900 words & fig.)

1928 656 .254 (.73)  
Railway Age, No. 2, July 14, p. 61.  
SHEPARD (H. A.). — New Haven completing extensive communication system. (2 100 words & fig.)

1928 625 .232 (.73)  
Railway Age, No. 2, July 14, p. 66.  
Rock Island diner highly attractive. (900 words & fig.)

1928 51. (08 (.73), 651 (.73) & 652 (.73)  
Railway Age, No. 2, July 14, p. 69.  
KNAUER (W. R.). — Pennsylvania squeezes waste out of supply motions. (2 300 words & fig.)

### Railway Engineer. (London.)

1928 621 .138.5 (.42) & 725 .33 (.42)  
Railway Engineer, July, p. 237.  
Reorganisation of Crewe locomotive works, London Midland & Scottish Ry. (8 800 words & fig.)

1928 656 .22  
Railway Engineer, July, p. 257.  
GAULD (R. D.). — The air resistance of railway trains. (2 700 words.)

1928 621 .133  
Railway Engineer, July, p. 262.  
New feed-water heater and pump for locomotive. (1 100 words & fig.)

1928 621 .95 (.42)  
Railway Engineer, July, p. 264.  
Drilling machine for fishplates. (600 words & fig.)

1928 625 .144  
Railway Engineer, July, p. 265.  
Handy portable rail drill. (700 words & fig.)

1928 621 .132.6 (.54)  
 Railway Engineer, July, p. 266.  
 New metre-gauge 4-6-4 type tank engines. (300 words & fig.)

1928 621 .133.7 (.42)  
 Railway Engineer, July, p. 267.  
 The A. C. F. I. feed-water heater. (1 600 words & fig.)

### Railway Engineering & Maintenance. (Chicago.)

1928 625 .142.3 (.73)  
 Railway Engineering and Maintenance, June, p. 240.  
 Delaware & Hudson goes into scrap rail cross tie production. (2 700 words & fig.)

1928 625 .13 (.73)  
 Railway Engineering and Maintenance, June, p. 244.  
 Erect 92-ton slabs with derricks. (900 words & fig.)

1928 625 .144.4 (.73)  
 Railway Engineering and Maintenance, June, p. 245.  
 ALBERTS (N. F.). — Surfacing track when laying new rail. (1 900 words.)

1928 621 .133.7 (.73) & 725 .33 (.73)  
 Railway Engineering and Maintenance, June, p. 247.  
 Southern makes important water supply improvements. (4 700 words & fig.)

1928 625 .162 (.73) & 625 .8 (.73)  
 Railway Engineering and Maintenance, June, p. 253.  
 HILLMAN (F. W.). — Highway crossing construction imposes many problems. (4 200 words & fig.)

1928 625 .144.4 (.73)  
 Railway Engineering and Maintenance, June, p. 262.  
 Burlington adopts electric tools. (1 200 words.)

1928 625 .1 (.73)  
 Railway Engineering and Maintenance, July, p. 292.  
 Restoring a broken-down line to serviceable condition. (3 700 words & fig.)

1928 385 .517 (.73)  
 Railway Engineering and Maintenance, July, p. 298.  
 The essentials of a labor camp. (2 900 words & fig.)

1928 625 .154 (.73)  
 Railway Engineering and Maintenance, July, p. 302.  
 Delaware & Hudson replaces turntable in 2 1/2 hours. (700 words & fig.)

1928 385 .113 (.73)  
 Railway Engineering and Maintenance, July, p. 308.  
 Railway purchases and expenditures in 1927. (600 words & 3 tables.)

### Railway Gazette. (London.)

1928 621 .94 (.42)  
 Railway Gazette, No. 25, June 22, p. 840.  
 New axle journal grinding machine. (800 words & fig.)

1928 621 .13 (06 (.42) & 621 .13 (0 (.43)  
 Railway Gazette, No. 25, June 22, p. 843.  
 The Institution of locomotive engineers in Germany. (4 300 words & fig.)

1928 621 .132.3 (.54)  
 Railway Gazette, No. 25, June 22, p. 847.  
 4-6-2 type engines for service on the metre-gauge lines of the Eastern Bengal and Bengal North-Western Railways. (500 words & fig.)

1928 625 .4 (.44)  
 Railway Gazette, No. 26, June 29, p. 872.  
 The Chamonix aerial mountain railway. (1 000 words & fig.)

1928 621 .132.6 (.82)  
 Railway Gazette, No. 26, June 29, p. 874.  
 4-8-4 tank locomotives for the Argentine. (650 words & fig.)

1928 656 .253 (.42)  
 Railway Gazette, No. 26, June 29, p. 875.  
 Colour light signalling on London & North Eastern Railway. (1 200 words & fig.)

1928 621 .132.3 (.945)  
 Railway Gazette, No. 26, June 29, p. 878.  
 New three-cylinder Pacific locomotive, Victorian Railways. (1 100 words & fig.)

1928 625 .232 (.42)  
 Railway Gazette, No. 1, July 6, p. 9.  
 New all-steel Pullman cars for service on the London & North Eastern Ry. (2 200 words & fig.)

1928 621 .138.5 (.42) & 725 .33 (.42)  
 Railway Gazette, No. 1, July 6, p. 13.  
 Reorganisation of Crewe locomotive Works, London Midland & Scottish Ry. (2 000 words & fig.)

1928 656 .1 (.73) & 656 .2 (.73)  
 Railway Gazette, No. 1, July 6, p. 26.  
 Railway motor coach operation in the United States. (1 700 words & fig.)

1928 656 .283 (.42)  
 Railway Gazette, No. 1, July 6, p. 31.  
 The Darlington railway accident. (600 words & fig.)

1928 656 .28 (0 (.42)  
 Railway Gazette, No. 2, July 13, p. 46.  
 Accident percentages. (950 words.)



1928 625 .232 (.42)  
 Railway Gazette, No. 2, July 13, p. 51.  
 New first-class lounge and dining cars, London Mid-  
 land & Scottish Ry. (600 words & fig.)

1928 621 .132.8 (.94)  
 Railway Gazette, No. 2, July 13, p. 53.  
 Internal-combustion locomotive for Australia. (900  
 words & fig.)

1928 625 .232 (.46)  
 Railway Gazette, No. 2, July 13, p. 54.  
 New all-steel sleeping cars for service in Spain and  
 Portugal. (1500 words & fig.)

1928 656 .222.1 (.44)  
 Railway Gazette, No. 2, July 13, p. 56.  
 Recent train accelerations in France. (1600 words &  
 3 tables.)

#### Railway Magazine. (London.)

1928 656 .222.1 (.42)  
 Railway Magazine, July, p. 35.  
 ALLEN (C. J.). — British locomotive practice and  
 performance. (4300 words, 5 tables & fig.)

#### Railway Signaling. (Chicago.)

1928 656 .253 (.71)  
 Railway Signaling, July, p. 243.  
 Canadian Pacific installs 18 miles of color-light type  
 automatic signals. (1600 words & fig.)

1928 625 .258 (.73) & 656 .259 (.73)  
 Railway Signaling, July, p. 247.  
 Car retarders reduce cost of yard operation on Nor-  
 folk & Western. (2100 words & fig.)

1928 656 .258 (.73)  
 Railway Signaling, July, p. 251.  
 Pennsylvania installs an interlocking without derails.  
 (900 words & fig.)

1928 656 .283 (.73)  
 Railway Signaling, July, p. 253.  
 Interstate Commerce Commission report of rear-end  
 collision at Danville, Ky. (1800 words.)

1928 625 .258 (.73), 656 .212 (.73)  
 & 656 .259 (.73)  
 Railway Signaling, July, p. 255.

FOX (E. N.). — Modern yards solve Boston terminal  
 problem for Boston & Maine. (800 words & fig.)

1928 656 .25 (09.3 (.73)  
 Railway Signaling, July, p. 265.  
 CARLEY (J. M.). — Signaling half a century ago.  
 (2000 words.)

1928 656 .25  
 Railway Signaling, July, p. 270.  
 ELSWORTH (R. B.). — Track circuits for la-  
 switches in car retarder hump yards. (500 words  
 fig.)

#### University of Illinois Bulletin. (Urbana.)

1928 621 .116 & 669  
 University of Illinois Bulletin, No. 177, June 5, p. 1.  
 PARR (S. W.) & STRAUB (F. G.). — Embrittlement  
 of boiler plate. (17000 words, 19 tables & fig.)

#### In Spanish.

#### Ingeniería y Construcción. (Madrid.)

1928 627 (.46)  
 Ingeniería y Construcción, Junio, p. 294.  
 MEMBRILLERA (F.). — Las obras del puerto de  
 Valencia. (2000 palabras & fig.)

1928 621 .3  
 Ingeniería y Construcción, Junio, p. 304.  
 Motor de explosión de compresión constante. (1400  
 palabras & fig.)

1928 624 .8 (.46)  
 Ingeniería y Construcción, Julio, p. 348.  
 MONTANER (A.). — El puente levadizo sobre el  
 canal de Alfonso XIII en Sevilla. (3400 palabras &  
 fig.)

1928 621 .3  
 Ingeniería y Construcción, Julio, p. 353.  
 LAFONT (A.). — La fabricación de cojinetes de ba-  
 las. (4000 palabras & fig.)

1928 621 .3  
 Ingeniería y Construcción, Julio, p. 369.  
 La locomotora Bergmann 2-C-2 de un solo motor  
 (800 palabras & fig.)

#### Revista de Obras Públicas. (Madrid.)

1928 624 .7 (.46)  
 Revista de Obras Públicas, n° 13, 1° de Julio, p. 236.  
 SAINZ (J. M.). — Puente de Dueñas. (2900 palabras  
 & fig.)

1928 6  
 Revista de Obras Públicas, n° 13, 1° de Julio, p. 243.  
 GONZALEZ (F.). — Un nuevo material de construc-  
 ción. El mortero celular. (1400 palabras & cuadros.)

1928 625 .1 (.44 + .460) & 625 .13 (.44 + .46)  
 Revista de Obras Públicas, n° 14, 15 de Julio, p. 249.  
 Ferrocarril de Canfranc. (13000 palabras & fig.)

**In Italian.**

**Rivista tecnica delle ferrovie italiane. (Roma.)**

1928 625 .1 (.45)  
Rivista tecnica delle ferrov. ital., 15 maggio, p. 201.

PALLAVICINI (A.). — La linea Vittorio Veneto. — Ponte nelle Alpi. (3 800 parole & fig.)

1928 656 .1 & 656 .2  
Rivista tecnica delle ferrov. ital., 15 maggio, p. 216.  
LANINO (P.). — Ferrovia ed automobile. (7 000 parole & 1 tabella.)

1928 621 .138 (.45) & 621 .33 (.45)  
Rivista tecnica delle ferrov. ital., 15 giugno, p. 257.  
ROMERO (R.) & CARLI (C.). — Sistemazione degli impianti di trazione in conseguenza dell'elettificazione della linea Genova-Livorno. I nuovi depositi di Livorno e Spezia Migliarina. — Ampliamento del deposito di Pisa. (8 900 parole & fig.)

1928 385. (01) (.86)  
Rivista tecnica delle ferrov. ital., 15 giugno, p. 279.  
PIN (F.). — Il problema ferroviario della Colombia. (2 500 parole & 1 cuadro.)

1928 385 .15 (.45)  
Rivista tecnica delle ferrov. ital., 15 giugno, p. 285.  
SCHUPFER (F.). — A proposito di concessioni ferroviarie. (2 800 parole.)

1928 385 (.4)  
Rivista tecnica delle ferrov. ital., 15 giugno, p. 291.  
MALTESE (S.). — Sulla contrazione dei traffici in Europa. (2 400 parole.)

1928 625 .616  
Rivista tecnica delle ferrov. ital., 15 giugno, p. 296.  
Per il progresso dei trasporti locali. (1 900 parole.)

**In Dutch.**

**De Ingenieur. (Den Haag.)**

1928 621 .33 (.494)  
De Ingenieur, N° 25, 23 Juni, p. V. 49.

WEISS. — Elektrifikation der Schweizerischen Bundesbahnen. (3 400 woorden, 3 tafereelen & fig.)

1928 624. (01)  
De Ingenieur, N° 25, 23 Juni, p. B. 163.  
VREEDENBURGH (C. G. J.). — Eenige opmerkingen over de invloedslinje voor de middensteunpuntsreactie aan een symmetrische vakwerkbrug op drie steunpunten. (3 000 woorden & fig.)

1928

624 .2 (01)

De Ingenieur, N° 28, 14 Juli, p. B. 169.

WISSELINK (W. J.). — Berekening van een gewapend beton kraanbaanbalk, welke regelmatig met betrekkelijk geringen paalafstand onderheid is. (1 900 woorden & fig.)

**Spoor- en Tramwegen. (Utrecht.)**

1928 621 .33 (01)  
Spoor- en Tramwegen, N° 1, 10 Juli, p. 2.

FRANCO (I.). — De economie der electrificatie van spoorwegen. (2 700 woorden & fig.)

1928 385 .113 (.492)  
Spoor- en Tramwegen, N° 1, 10 Juli, p. 24.

De Nederlandsche spoorwegen over 1927. (1 000 woorden & tafereelen.)

**In Polish.**

**INŻYNIER KOLEJOWY. (Warszawa.)**

1928 625 .11  
Inżynier Kolejowy, 1 Czerwca, str. 177.

BUDKIEWICZ (W.). — Aparat do automatycznego niwelowania z zastosowaniem urządzenia do ciągłych zdjęć fotograficznych. (1 700 słowa & fig.)

1928 621 .133.7  
Inżynier Kolejowy, 1 Czerwca, str. 187.

DEREWIANKO (M.). — Aparat do oczyszczania wody zasilającej kocioł parowy. (450 słowa & fig.)

1928 625 .23 (01)  
Inżynier Kolejowy, 1 Lipca, str. 195.

LOPUSZYNSKI (W.). — Nieco z dynamiki pojazdów kolejowych. (5 400 słowa, 3 tablice & rys.)

1928 625 .13 (.438)  
Inżynier Kolejowy, 1 Lipca, str. 206.

OLSZEWSKI (S.) & SUSZYNSKI (S.). — Kilka słów o budowie tunelu linii Srednicowej w Warszawie. (3 200 słowa & rys.)

**In Portuguese.**

**Gazeta dos Caminhos de ferro. (Lisboa.)**

1928 385. (01) (.68)  
Gazeta dos caminhos de fer., n° 972, 16 de Junho, p. 183.

LOPES GALVÃO. — A rede ferro-viária de Moçambique. (2 800 palavras.)

**Revista das Estradas de ferro. (Rio de Janeiro.)**

1928 621 .33 (09)  
Revista das Estradas de ferro, n° 71, 30 de junho, p. 380.

GUIMARÃES (A. M.). — Os ferrocarris e a electridade. (3 200 palavras.)





# MONTHLY BIBLIOGRAPHY OF RAILWAYS <sup>(1)</sup>

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016 .585 (02 ]

## I. — BOOKS.

In French.		
1928	621 .94 (02	CUVILLIER (T.), contrôleur principal des Mines. Législation et contrôle des appareils à vapeur. Paris (6°), Dunod, éditeur, 92, rue Bonaparte. 2° édition, revue et mise à jour par H. de Buttet. (12 × 18 cm.), x-368 pages avec une planche. (Prix : 44 francs.)
1928	31 (02	1928 621 .135.3 (08 & 625 .213. (08 DES GARDES (E.), ingénieur. Calcul des ressorts. Paris (6°), 15, rue des Saints-Pères; Liège, 1, quai de la Grande-Bretagne, Librairie polytechnique Ch. Béranger. 2° édition. In-8° de 120 pages avec 47 fig. (Prix : 20 francs.)
1928	621 .114	1928 72 HEBRARD (A.), architecte diplômé par le Gouvernement français, ex-inspecteur au Palais des Beaux-Arts. Architecture. Paris, Dunod, éditeur. 2° édition. In-16 de xu-564 pages, avec 371 fig. et 16 planches. (Prix : 58 francs.)
1928	656 .24 (.44)	1928 62 (01 MARCOTTE (Edmond), ingénieur, chef de la section des essais au Laboratoire de l'Ecole nationale des Ponts et Chaussées, et VOIGNIER (Henri), ingénieur, attaché au même Laboratoire. Notions de résistance des matériaux. Essais, calculs, statique graphique, vérifications expérimentales. Paris, Delagrave, éditeur. (20 × 26 cm.), avec fig. (Prix : 20 francs.)
1928	385 .517 (.44)	1928 PERNET, inspecteur principal attaché à la Direction. L'effort social de la Compagnie P. L. M. Paris, 88, rue Saint-Lazare.

<sup>(1)</sup> The numbers placed over the title of each book are those of the decimal classification proposed by the Railway Congress conjointly with the Office Bibliographique International of Brussels. (See « Bibliographical Decimal Classification as applied to Railway Science », by H. BISSENBRUCH in the number for November, 1897, of the *Bulletin of the International Railway Congress*, p. 1509).

- 1928 38 & 385. (06.2  
**SOCIÉTÉ DES NATIONS.** Commission consultative et  
 technique des communications et du transit.  
 Procès-verbal de la 12<sup>e</sup> session tenue à Genève du  
 27 février au 2 mars 1928 (avec annexes).  
 Genève, Société des Nations. (21 × 33 cm.), 154  
 pages.

**In German.**

- 1928 721 .4  
**KÖGLER.**  
 Gewölbetabellen.  
 Berlin, W. 9. Verlag von Julius Springer. 104 Seiten  
 mit 29 Abb. (Preis : 7.50 Rm.)
- 1928 691 & 721 .9  
**OLSEN (H.), Dr. Ing.**  
 Die wirtschaftliche und konstruktive Bedeutung er-  
 höhter zulässiger Beanspruchungen für den Eisenbeton-  
 bau.  
 Berlin, W. 8. Verlag von Wilhelm Ernst & Sohn.  
 (18.5 × 27 Ztm.), 100 Seiten, 23 Abb. und 26 Tabellen.  
 (Preis : 9 Rm.)

**In English.**

- 1928 62. (06 (09 (.42)  
 A brief history of the Institution of Civil Engineers.  
 London, S. W. 1. Published by the Institution, Great  
 George Street, Westminster, 61 pages.
- 1928 656 .225 (.73)  
**AMERICAN RAILWAY ASSOCIATION.**  
 Recommended methods covering the loading of various  
 commodities in closed cars, box, stock, etc.  
 New York & Chicago. Published by the Association.  
 14 pages.
- 1928 625 .142.2 (06 (.73) & 691. (06 (.73)  
**AMERICAN WOOD-PRESERVERS' ASSOCIATION.**  
 Proceedings of the twenty-fourth annual meeting held  
 at Mount Royal Hotel, Montreal, Que., January, 24-26,  
 1928.  
 Chicago. Published by the Association. (6 × 9 in-  
 ches), 327 pages, tables & fig.
- 1928 69 (02  
**ANDREWS (Ewart S.).**  
 The theory and design of structures.  
 London, Chapman and Hall, Ltd. 4th edition. (Price :  
 13 sh. 6 d. net.)
- 1928 69 (02  
**ARTHUR (William).**  
 Estimating building costs. A concise and handy guide  
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- 1928 625 0  
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 No. 361.  
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AUBERT. — Expériences effectuées sur le pont en  
béton armé de Corbeil. (2 700 mots, tableaux & fig.)

1928 625 .113 & 625 .144.2  
Ann. des ponts et chauss., part. techn., mai-juin, p.269.  
NICOLAS. — Raccordements paraboliques de lon-  
gueurs égales à celles des raccords de surhaussement  
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BONNEFOY (F.). — Notes sur l'organisation ration-  
nelle. (3 700 mots & fig.)

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Usinage des aciers au manganèse. (1 000 mots.)

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Bull. techn. de la Suisse romande, n° 16, 11 août, p.185  
MULLER (A.-E.). — La locomotive type AA-AA  
n° 82 du Chemin de fer de la Bernina. (2 500 mots &  
fig.)

#### Bulletin des transports internationaux par chemins de fer. (Berne.)

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Désignation des classes de voitures composant les  
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Statistique des Chemins de fer néerlandais pour l'an-  
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1928 625 .216 (.44)  
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Le problème de l'attelage automatique des wagons.  
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La politique d'économie pratiquée par nos Grands  
Réseaux. (1 200 mots & graphique.)

#### Génie civil. (Paris.)

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DANTIN (Ch.). — Les chemins de fer transpyré-  
néens. Mise en exploitation de la ligne de Bedous à  
Jaca. (5 800 mots & fig.)

1928  
Génie Civil, n° 2397, 21 juillet, p. 60.  
FREYSSINET (E.). — Influence de la quantité d'eau  
de gâchage sur la qualité des bétons, examinée du point  
de vue des chantiers. (4 200 mots.)

1928 625 .14  
Génie Civil, n° 2397, 21 juillet, p. 73.  
Les éclissages électriques pour voies ferrées. (700  
mots & fig.)

1928 621 .331 (.44)  
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La nouvelle centrale « Port du Rhin », de la Société  
« Electricité de Strasbourg ». (5 200 mots & fig.)

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Génie Civil, n° 2399, 4 août, p. 105.  
IRURETA (J.). — Les nouvelles grues électriques et  
mécanisme de relevage rapide du port de Santander  
(Espagne). (1 300 mots & fig.)

1928 669 .1  
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FRÉMONT (Ch.). — Essais de réception des aciers  
pour constructions métalliques. (1 900 mots & fig.)

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RAVIZÉ (H.). — Le calcul des pièces fléchies  
comprimées en béton armé. (1 700 mots & fig.)

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COYNE (A.) & FREYSSINET (E.). — Nouvelles pré-  
visions sur la maladie de certains bétons de ciment al-  
calins. (4 000 mots.)

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Pont en arc, dit funiculaire, système Herrera. (4  
mots & fig.)

#### La Science et la Vie. (Paris.)

1928 621 .33 (.44 + .460) & 625 .1 (.44 + .460)  
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GODARD (T.). — La traction électrique à vaineu  
Pyrénées. (4 700 mots & fig.)

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Les chemins de fer et les tramways, août, p. 175.

CROZET (A.). — L'influence de la stabilisation sur la comptabilité des compagnies de chemins de fer. (1 100 mots.)

1928 621 .132.5 (.73)  
Les chemins de fer et les tramways, août, p. 176.

Locomotive à marchandises du Chicago, Burlington and Quincy Railroad. (950 mots & fig.)

1928 621 .132.8  
Les chemins de fer et les tramways, août, p. 178.

Une nouvelle automotrice à vapeur type « Sentinel ». (4 300 mots & fig.)

1928 621 .335 (.61) & 621 .43 (.61)  
Les chemins de fer et les tramways, p. 185.

Locomotive Diesel-électrique de la Compagnie Fer-rière des Chemins de fer Tunisiens. (2 000 mots & fig.)

1928 656 .256.3  
Les chemins de fer et les tramways, août, p. 188.

GUIRAUD (E.). — Pédale électrique de signalisation. (1 200 mots & fig.)

1928 625 .234  
Les chemins de fer et les tramways, août, p. 191.

CROZET (A.). — Dispositif d'accouplement métallique pour chauffage. (1 000 mots & fig.)

1928 691  
Les chemins de fer et les tramways, août, p. 192.

CROZET (A.). — Les pierres artificielles dans les constructions modernes des chemins de fer. Le « Mar-quiol ». (1 300 mots & 1 tableau.)

## L'Industrie des voies ferrées et des transports automobiles. (Paris.)

1928 625 .233 & 625 .234  
L'Ind. voies ferrées et transp. autom., juillet, p. 193.

MAINCENT. — Le chauffage et l'éclairage des voi-tures sur les lignes d'intérêt local à traction à vapeur. (2 400 mots.)

1928 625 .611 (.44)  
L'Ind. voies ferrées et transp. autom., août, p. 216.

La question de la remboursabilité des subventions allouées par l'Etat aux voies ferrées d'intérêt local. (5 300 mots.)

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1928 625 .142.4  
Rev. du béton armé et des entrepr. gén., 15 juil., p. 801.

Quelques observations sur les traverses en béton armé. (2 400 mots & fig.)

## Revue générale des chemins de fer. (Paris.)

1928 621 .133.5 (01 (.44)  
Revue générale des chemins de fer, août, p. 191.

CHAPELON (André). — Note sur les échappements de locomotives. Résultats d'expériences effectuées à la Compagnie de Paris-Orléans. (8 600 mots & fig.)

1928 385 .113 (.44)  
Revue générale des chemins de fer, août, p. 211.

Les résultats de l'exploitation des cinq grandes com-pagnies de chemins de fer en 1927. (13 000 mots & tableaux.)

1928 385 .113 (.436)  
Revue générale des chemins de fer, août, p. 240.

Les résultats des Chemins de fer fédéraux autrichiens pour l'exercice 1926. (6 000 mots & 1 tableau.)

1928 385 .113 (.439)  
Revue générale des chemins de fer, août, p. 248.

La situation des chemins de fer hongrois en 1926-27. (1 200 mots & tableaux.)

1928 621 .336  
Revue générale des chemins de fer, août, p. 258.

Transmission universelle pour locomotives électriques et changement de vitesse actionné par huile sous pres-sion pour locomotives Diesel, construits par la Société de Locomotives de Winterthur. (1 600 mots & fig.)

1928 621 .131.2 (.43)  
Revue générale des chemins de fer, août, p. 262.

Normes allemandes pour la construction des locomotives. (1 350 mots.)

## Revue politique et parlementaire. (Paris.)

1928 385. (01 (.6)  
Revue politique et parlementaire, 10 août, p. 196.

Transsaharien et transafricain. (6 000 mots.)

1928 385. (09 (.44)  
Revue politique et parlementaire, 10 août, p. 342.

PAYEN (E.). — Les chemins de fer : une industrie progressive. (5 800 mots.)

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### Elektrotechnische Zeitschrift. (Berlin.)

1928 621 .33 (.3)  
Elektrotechnische Zeitschrift, Heft 30, 26. Juli, S. 1069.

Die Entwicklung der elektrischen Zugförderung im Jahre 1927. (6 800 Wörter.)

1928 621 .13 & 621 .335  
Elektrotechnische Zeitschrift, Heft 30, 26. Juli, S. 1124.

Zugförderkosten der Güterzüge bei Dampf- und elek-trischem Betrieb. (700 Wörter & Tabellen.)

1928 621 .335. (01)  
Elektrotechnische Zeitschrift, Heft 32, 9. Aug. S. 1188.  
BUTTLER (A.). — Einfluss der Lüftung auf das Gewicht der Widerstände von Gleichstromlokomotiven. (1 200 Wörter, 4 Tafeln & Abb.)

1928 656 .211.5 (.43)  
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Fahrtrichtungsanzeiger für Personenbahnhöfe. (450 Wörter & Abb.)

### Glaser's Annalen. (Berlin.)

1928 621 .138 (.43)  
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GOTTSCALK (M.). — Lokomotivbehandlungsanlage Halle a. d. Saale. (1 600 Wörter, 1 Tabelle & Abb.)

### In English.

Bengal-Nagpur Railway Magazine. (Calcutta.)  
1928 385. (07.1 (.54)  
Bengal-Nagpur Railway Magazine, July, p. 7.  
Engineering training College, Sini. (1 100 words & fig.)

### Bulletin, American Railway Engineering Association. (Chicago.)

1928 625 .142 (.4 + .73)  
Bull. Amer. Ry. Eng. Ass<sup>on</sup>, June, p. 3.  
von SCHRENK (H.). — Mechanical wear of ties. (36 000 words, tables & fig.)

### Electric Railway Journal. (New-York.)

1928 621 .33 (.45)  
Electric Railway Journal, No. 1, July 7, p. 4.  
CUSANI (marquis F. C.). — Milan adopts pay-as-you-pass cars. (2 800 words & fig.)

1928 388 (.73)  
Electric Railway Journal, No. 4, July 28, p. 132.  
New traffic code recommended for Boston. (3 900 words & fig.)

1928 625 .143.3  
Electric Railway Journal, No. 4, July 28, p. 138.  
SILBERSTEIN (J.). — Increasing rail and tire life. (1 300 words.)

1928 388 (.73)  
Electric Railway Journal, No. 5, August 4, p. 172.  
Transportation improvements recommended for Milwaukee. (2 000 words & fig.)

1928 621 .33 (.494)  
Electric Railway Journal, No. 5, August 4, p. 176.  
HEALY (K. T.). — Water power a factor in the electrification of Swiss Railways. (2 600 words, 3 tables & fig.)

1928 385 .59 (.73)  
Electric Railway Journal, No. 5, August 4, p. 183.  
GRAHAM (R. N.). — Courtesy is the key to platform employee salesmanship. (2 300 words.)

1928 725 .33 (.73)  
Electric Railway Journal, No. 6, August 11, p. 212.  
TUCKER (N. E.). — Pittsburgh builds modern sand drying plant. (1 900 words & fig.)

### Engineer. (London.)

1928 656 .213 (.42)  
Engineer, No. 3783, July 13, p. 28.  
Improvements at the Tilbury, West India and Millwall Docks. (2 900 words & fig.)

1928 385 .51  
Engineer, No. 3783, July 13, p. 30.  
TRIPP (G. W.). — A co-operative production scheme (The Priestmann-Atkinson System.) (4 300 words.)

1928 621 .135. (0)  
Engineer, No. 3784, July 20, p. 58.  
LOMONOSSOFF (G.). — Dynamic loading on locomotive wheels. (2 300 words & fig.)

1928 625 .122  
Engineer, No. 3784, July 20, p. 73.  
A rock drill holder. (400 words & fig.)

1928 621 .87 & 625 .11  
Engineer, No. 3785, July 27, p. 85.  
Railway breakdown equipment and work. (5 700 words & fig.)

1928 656 .212.6 (.42)  
Engineer, No. 3785, July 27, p. 100.  
A level-luffing crane. (650 words & fig.)

1928 625 .1 (.44 + .460)  
Engineer, No. 3786, August 3, p. 109.  
The Transpyrenean Railways. (2 200 words & fig.)

1928 621 .335 (.54)  
Engineer, No. 3786, August 3, p. 114.  
Express passenger electric locomotive for the Great Indian Peninsula Railway. (3 700 words & fig.)

1928 691 & 727 .5 (.42)  
Engineer, No. 3786, August 3, p. 115.  
Research in British timber. (2 200 words & fig.)

1928 725 (.43)  
Engineer, No. 3786, August 3, p. 117.  
A new exhibition hall at Leipzig. (1 700 words & fig.)

1928 621 .31 (.71)  
Engineer, No. 3787, August 10, p. 136.  
Some recent Canadian hydro-electric power plants. (8 500 words & fig.)



1928 621 .135.2  
 Engineer, No. 3787, August 10, p. 141.  
 Depth of locomotive tire flanges. (800 words.)

1928 691 (.73)  
 Engineer, No. 3787, August 10, p. 141.  
 American specification for waterproofing material  
 for Portland cement concrete. (800 words.)

1928 621 .94 (.42)  
 Engineer, No. 3787, August 10, p. 154.  
 Re-turning lathe for axle journals. (500 words & fig.)

### Engineering. (London.)

1928 385. (.0 (.56)  
 Engineering, No. 3258, June 22, p. 776.  
 The Railways of Iraq. (2 600 words.)

1928 627 (.42) & 656 .213 (.42)  
 Engineering, No. 3259, June 29, p. 800.  
 WENTWORTH-SHIELDS (F. E.). — The port of  
 Southampton. (6 000 words & fig.)

1928 347 .763 (.42)  
 Engineering, No. 3260, July 6, p. 17.  
 The Railway Road-Transport Bills. (1 800 words.)

1928 62 (.01  
 Engineering, No. 3260, July 6, p. 28.  
 The Herbert Cloudburst hardness testing machine.  
 (1 600 words & fig.)

1928 624.2  
 Engineering No. 3261, July 13, p. 31.  
 The Beggs deformeter. (3 900 words & fig.)

1928 62. (01 (06 (.42)  
 Engineering, No. 3261, July 13, p. 35.  
 Annual meeting of the General Board of the National  
 Physical Laboratory, June 26, 1928. (3 200 words.)

1928 385 .11 (.54)  
 Engineering, No. 3261, July 13, p. 48.  
 Indian Railway progress. (2 200 words.)

1928 621 .132.3 (.494) & 621 .134.3 (.494)  
 Engineering, No. 3261, July 13, p. 51.  
 High-pressure passenger locomotive. (2 700 words  
 & fig.)

1928 656 212.6 (.42)  
 Engineering, No. 3262, July 20, p. 67.  
 Traveling conveyor coal-loading plant at Workington.  
 (2 100 words & fig.)

1928 621 .116  
 Engineering, No. 3262, July 20, p. 74.  
 The Wildish protected-bolt firebrick. (300 words &  
 fig.)

1928 621 .87  
 Engineering, No. 3262, July 20, p. 88.  
 FIEGEHEN (E. G.). — Structural towers for fixed  
 and travelling cranes. (3 600 words & fig.)

1928 621 .133.1 (.43)  
 Engineering, No. 8263, July 27, p. 96.  
 Pulverized-fuel locomotive for the German State Railways.  
 (3 900 words & fig.)

1928 691  
 Engineering, No. 3263, July 27, p. 111.  
 The deterioration of structures in sea-water. (4 000  
 words.)

1928 669  
 Engineering, No. 3263, July 27, p. 115.  
 FRIEND (J. N.). — The relative corrodibilities of  
 ferrous and non-ferrous metals and alloys. (5 400 words,  
 3 tables & fig.)

1928 621 .116  
 Engineering, No. 3264, August 3, p. 125.  
 The measurement of lagging temperatures. (1 800  
 words, 1 table & fig.)

1928 621 .335 (.54)  
 Engineering, No. 3264, August 3, p. 135.  
 Electric passenger locomotive; Great Indian Peninsula  
 Ry. (2 600 words & fig.)

1928 385 .51 (.42)  
 Engineering, No. 3264, August 3, p. 139.  
 The Railway settlement. (1 400 words.)

1928 691  
 Engineering, No. 3264, August 3, p. 140.  
 The conservation of timber. (1 900 words.)

1928 621 .392 (.42)  
 Engineering, No. 3265, August 10, p. 158.  
 Resistance welders as manufacturing tools. (1 700  
 words & fig.)

1928 621 .335 (.54)  
 Engineering, No. 3265, August 10, p. 163.  
 Electric freight locomotive for the Great Indian Peninsula  
 Ry. (2 700 words & fig.)

1928 656 .212.6 (.42)  
 Engineering, No. 3265, August 10, p. 182.  
 Portable double-arm sack piler. (400 words & fig.)

### Engineering News-Record. (New-York.)

1928 625.3 (.73)  
 Engineering News-Record, No. 3, July 19, p. 84.  
 Platform lift on incline raises cars 313 ft. (1 800  
 words & fig.)

1928 725 .31 (.44)  
 Engineering News-Record, No. 3, July 19, p. 100.  
 Building design provides for expected settlement.  
 (800 words & fig.)

1928 624 .8 (.73)  
Engineering News-Record, No. 3, July 19, p. 103.  
HUNT (J. L.). — Special track construction for large  
basculer bridge. (1 200 words & fig.)

1928 621 .392 (.73) & 624 .32 (.73)  
Engineering News-Record, No. 4, July 26, p. 120.  
FISH (G. D.). — First arc-welded railway truss  
bridge. (1 800 words & fig.)

1928 656 .213 (.73)  
Engineering News-Record, No. 4, July 26, p. 123.  
Rail-and-river terminal built at Minneapolis. (400  
words & fig.)

1928 691  
Engineering News-Record, No. 4, July 26, p. 127.  
CHRISTENSEN (C. L.). — Designing reinforced con-  
crete against bending and compression. (800 words &  
fig.)

1928 625 .4 (.73)  
Engineering News-Record, No. 4, July 26, p. 132.  
PAASWELL (G.). — Underpinning railway tracks  
for subway crossing. (1 800 words & fig.)

1928 624 .63 (.73)  
Engineering News-Record, No. 4, July 26, p. 135.  
Highway bridge of graceful contour in North Caro-  
lina mountains. (900 words & fig.)

1928 669 .3  
Engineering News-Record, No. 5, August 2, p. 161.  
JONES (W. N.). — Brass in engineering: failures  
and remedies. (3 600 words & fig.)

1928 656 .1  
Engineering News-Record, No. 5, August 2, p. 168.  
DOUGLAS (N. D.). — Effect of distance on automo-  
bile operating costs. (1 900 words & 1 table.)

1928 691  
Engineering News-Record, No. 6, August 9, p. 196.  
JONES (E. N.). — Developing a ready-mixed con-  
crete business. (3 000 words & fig.)

1928 625 .13 (.73)  
Railway News-Record, No. 6, August 9, p. 203.  
Driving a 1/2-mile rock tunnel on the Illinois Central  
Railroad. (600 words & fig.)

1928 621 .116 & 669 .1  
Engineering News-Record, No. 6, August 9, p. 209.  
Corrosion of boilers checked by electrochemical sys-  
tem. (1 000 words.)

1928 526  
Engineering News-Record, No. 6, August 9, p. 215.  
BILBY (J. S.). — New design steel towers used in  
triangulation. (1 800 words & fig.)

1928 624 .1 (.73)  
Engineering News-Record, No. 7, August 16, p. 232.  
TELFORD (R. L.). — Deep cofferdam for Hudson  
River bridge. (3 000 words & fig.)

1928 62. (01 & 669  
Engineering News-Record, No. 7, August 16, p. 244.  
RAWDON (H. S.). — Strain effects in mild steel  
(4 200 words & fig.)

## Mechanical Engineering. (New-York).

1928 621 .4  
Mechanical Engineering, August, p. 589.  
PRATT (H. A.). — The economic field for small and  
medium-size Diesel engines. (2 400 words, 2 tables  
& fig.)

1928 614 .8 (.73)  
Mechanical Engineering, August, p. 595.  
TOLMAN (C. P.). — Safety and production. (1 900  
words.)

1928 621 .134.2 (.73)  
Mechanical Engineering, August, p. 638.  
An American locomotive with Caprotti poppet valve  
(650 words.)

## Modern Transport. (London.)

1928 656 .1 (.42) & 656 .2 (.42)  
Modern Transport, No. 488, July 21, p. 2.  
Railways and their road powers. (900 words.)

1928 621 .33 (.43)  
Modern Transport, No. 488, July 21, p. 3.  
Railway electrification in Europe. The Berlin City  
& Suburban Railway. (3 400 words & fig.)

1928 656 .1 (.42) & 656 .2 (.42)  
Modern Transport, No. 488, July 21, p. 7.  
Final stages of the Companies' Bills in the House of  
Commons. (2 300 words.)

1928 656 .211.7 (.71)  
Modern Transport, No. 488, July 21, p. 10.  
New steamers for Canada-West Indies services. (1 500  
words & fig.)

1928 656 .253 (.42)  
Modern Transport, No. 489, July 28, p. 3.  
Further day colour-light signalling on the Southern  
Ry. (1 800 words & fig.)

1928 621 .33 (.44)  
Modern Transport, No. 489, July 28, p. 4.  
Railway electrification in Europe. The Paris-St. Ger-  
main section of the French State Railways. (3 200  
words & fig.)

1928 656 .1 (.73) & 656 .2 (.73)  
Modern Transport, No. 489, July 28, p. 9.  
Railways and road transport. Developments in U. S. A.  
(900 words.)

1928 385 (09.1 (.52)  
Modern Transport, No. 490, August 4, p. 3.  
The State-owned railways of Chosen (Korea). (1 400  
words & fig.)

1928 625 .245 (.73) & 656 .261 (.73)  
Modern Transport, No. 490, August 4, p. 5.  
WILSON (G. H.). — American railways and the con-  
tainer system. (1700 words & fig.)

1928 625 .232 (.44)  
Modern Transport, No. 490, August 4, p. 7.  
Steel corridor coaches on the Nord Railway. (1600  
words & fig.)

1928 621 .335 (.54)  
Modern Transport, No. 490, August 4, p. 9.  
British-built electric locomotive for Great Indian Pe-  
ninsula Ry. (4000 words & fig.)

1928 621 .33 (.42)  
Modern Transport, No. 490, August 4, p. 20.  
The new « English electric » trolley bus. (1400 words  
& fig.)

1928 621 .132.3 (.73)  
Modern Transport, No. 491, August 11, p. 3.  
New Baltimore and Ohio Railroad engine adopts fea-  
tures of Great Western Ry. « King George V ». (1700  
words & fig.)

1928 656 .255 (.42)  
Modern Transport, No. 491, August 11, p. 5.  
Single line token working on the London Midland &  
Scottish Ry. (3100 words & fig.)

### Railway Age. (New-York.)

1928 624. (0)  
Railway Age, No. 4, Section one, July 28, p. 136.  
May we expect innovations in steel bridge building.  
(1000 words.)

1928 625 .13 (.73)  
Railway Age, No. 4, Section one, July 28, p. 139.  
Chesapeake & Ohio to renew bridge over Ohio river.  
(2600 words & fig.)

1928 621 .132.5 (.73)  
Railway Age, No. 4, Section one, July 28, p. 144.  
Boston & Maine acquires twenty 2-8-4 type loco-  
motives. (1300 words, tables & fig.)

1928 621 .139 (.73), 625 .18 (.73) & 625 .27 (.73)  
Railway Age, No. 4, Section one, July 28, p. 149.  
Younger stores men « write up » supply conditions.  
(5200 words.)

1928 656 .225 (.73)  
Railway Age, No. 4, Section one, July 28, p. 153.  
Fruits and vegetables shipped long distances. (2000  
words & tables.)

1928 656 .223.2 (.73)  
Railway Age, No. 4, Section one, July 28, p. 156.  
McMANAMY criticizes private car practices. (3600  
words & table.)

1928 385 .113 (.73)  
Railway Age, No. 4, Section one, July 28, p. 159.  
STEDMAN (J. W.). — The stockholders' decreasing  
share in gross earnings. (3400 words.)

1928 625 .143.3 & 625 .212  
Railway Age, No. 4, Section one, July 28, p. 161.  
Locomotive flange oiler operated by compressed air.  
(350 words & fig.)

1928 656 .1 (06) (08) (.73)  
Railway Age, No. 4, Section two, July 28, p. 181.  
Motor Transport Division meets at Atlantic City.  
(10000 words & fig.)

1928 621 .14 (.73)  
Railway Age, No. 4, Section two, July 28, p. 189.  
Steam-line coach with Rotobaker power unit. (700  
words & fig.)

1928 656 .1 (.73) & 656 .2 (.73)  
Railway Age, No. 4, Section two, July 28, p. 190.  
Southern Pacific establishing a large highway system.  
(2000 words & fig.)

1928 621 .132.8 (.73) & 621 .14 (.73)  
Railway Age, No. 4, Section two, July 28, p. 197.  
Twin coach combination rail and highway unit. (800  
words & fig.)

1928 656 .24 (.73)  
Railway Age, No. 4, Section two, July 28, p. 199.  
Insurance of reserve fund to pay claims? (1900  
words.)

1928 656 .1 (.73) & 656 .2 (.73)  
Railway Age, No. 4, Section two, July 28, p. 201.  
Motor coaches recover lost passenger traffic. (1300  
words, 1 table & fig.)

1928 625 .143 (.73)  
Railway Age, No. 5, August 4, p. 209.  
Heavier rails for heavy traffic. (4500 words & fig.)

1928 656 .222 (.73) & 656 .255 (.73)  
Railway Age, No. 5, August 4, p. 213.  
Running time reduced 1 hour 44 minutes on single-  
track division. (2200 words, 8 tables & fig.)

1928 656 .223.1 (.73)  
Railway Age, No. 5, August 4, p. 217.  
RODENBAUGH (H. N.). — Handling a large special  
passenger movement successfully. (2300 words & fig.)

1928 656 .223.2 (.73)  
Railway Age, No. 5, August 4, p. 223.  
PECK (C. B.). — The utilization of freight cars.  
(3400 words, 2 tables & fig.)

1928 621 .13 (0)  
Railway Age, No. 6, August 11, p. 250.  
Locomotives efficiencies. (1100 words.)



1928 656  
 Railway Age, No. 6, August 11, p. 251.  
**Railroads or all round transportation Companies?**  
 (800 words.)

1928 656 .225 (.73)  
 Railway Age, No. 6, August 11, p. 253.  
**Handling fruit** across the Continent. (2 600 words,  
 1 table & fig.)

1928 625 .139 (.73), 625 .18 (.73) & 625 .27 (.73)  
 Railway Age, No. 6, August 11, p. 257.  
 TAYLOR (V. R.). — **Pricing supplies** saves money on  
 Southern Pacific. (1 000 words & fig.)

1928 385 .11 (.73)  
 Railway Age, No. 6, August 11, p. 259.  
**Pennsylvania improves efficiency.** (2 700 words, 3 ta-  
 bles & fig.)

1928 691 (.73)  
 Railway Age, No. 6, August 11, p. 262.  
 COOK (C. C.). — **Wood utilization** is important to  
 the railways. (2 900 words & fig.)

1928 625 .232 (.73)  
 Railway Age, No. 6, August 11, p. 265.  
 New York Central puts **de luxe coach train** in service.  
 (1 400 words & fig.)

1928 625 .122 (.73)  
 Railway Age, No. 6, August 11, p. 268.  
 Jordan **spreader** provided with new features. (400  
 words & fig.)

1928 625 .258 (.73)  
 Railway Age, No. 6, August 11, p. 268.  
 The Hayes **wheel stop.** (200 words & fig.)

1928 621 .13 (0 (.73)  
 Railway Age, No. 6, August 11, p. 269.  
 PECK (C. B.). — **The utilization of locomotives.**  
 (2 000 words, 4 tables & fig.)

### Railway Engineer. (London.)

1928 621 .138.3 (.42)  
 Railway Engineer, August, p. 274.  
 The **maintenance of locomotive boilers.** (1,000 words.)

1928 656 .28 (0 (.73)  
 Railway Engineer, August, p. 274.  
 Improved **safety record** on American Railways. (1 200  
 words.)

1928 625 .143.2 & 625 .143.3  
 Railway Engineer, August, p. 275.  
**Steel rail considerations.** (500 words.)

1928 656 .253  
 Railway Engineer, August, p. 291.  
**Optical route-indicating signals.** (750 words & fig.)

1928 625 .1 (.66)  
 Railway Engineer, August, p. 296.  
**Permanent way and bridges,** Sierra Leone Ry. (60  
 words, 1 table & fig.)

1928 621 .335 (.54)  
 Railway Engineer, August, p. 299.  
**Electric locomotives** for the Great Indian Peninsula  
 Ry. (700 words & fig.)

1928 625 .245 (.42)  
 Railway Engineer, August, p. 300.  
 Gas storage **tanks,** London Midland & Scottish Rail-  
 way. (600 words & fig.)

1928 621 .133.1  
 Railway Engineer, August, p. 301.  
 HEARN (Sir Gordon). — **Boiler water** for locomotives.  
 (2 500 words.)

1928 621 .13 & 621 .13  
 Railway Engineer, August, p. 303.  
 Latest types of **steam and internal-combustion loco-**  
**motives.** (2 100 words & 2 tables.)

1928 741  
 Railway Engineer, August, p. 305.  
 CUNNINGHAM (R. H.). — **Diagram for crossing**  
**work in parallel lines.** (300 words & fig.)

1928 625 .143.2 & 625 .143.3  
 Railway Engineer, August, p. 306.  
 The **steel rail reliability** versus wearing capacity  
 (1 600 words & fig.)

### Railway Engineering & Maintenance. (Chicago.)

1928 625 .143 (.73)  
 Railway Engineering & Maintenance, August, p. 328.  
**Catching up with the locomotives.** (7 700 words &  
 fig.)

1928 625 .154 (.73)  
 Railway Engineering & Maintenance, August, p. 335.  
**Turntable renewed** in 6 1/2 hours. (750 words & fig.)

1928 625 .144.4 (.73)  
 Railway Engineering & Maintenance, August, p. 337.  
**Relaying and surfacing** a mile of track a day. (1 400  
 words & fig.)

1928 614 .8 (.73)  
 Railway Engineering & Maintenance, August, p. 341.  
 DESMOND (J. J.). — **Avoiding accidents** in one of  
 the country's busiest terminals. (2 300 words & fig.)

1928 625 .151 (.73)  
 Railway Engineering & Maintenance, August, p. 343.  
**Protecting facing point switches.** (1 000 words & fig.)

1928 698 (.73)  
 Railway Engineering & Maintenance, August, p. 345.  
**How are your painting records?** (2 800 words & fig.)

1928 625 .143.4 (.73)  
 Railway Engineering & Maintenance, August, p. 348.  
 HILLARY (W. R.). — How to test spring washers  
 the track. (1 600 words.)

1928 62. (01 (06 (.73)  
 Railway Engineering & Maintenance, August, p. 350.  
 Railway-materials hold important place at American  
 Society for Testing Materials meeting, Atlantic  
 City, N. J., 25-29 June 1928. (2 100 words & fig.)

### Railway Gazette. (London.)

1928 625 .232 (.42)  
 Railway Gazette, No. 3, July 20, p. 79.  
 New triplet articulated restaurant-car sets, London  
 North Eastern Railway. (700 words & fig.)

1928 625 .144.4 (.42)  
 Railway Gazette, No. 3, July 20, p. 83.  
 The Morris track-laying machine. (1 400 words &  
 fig.)

1928 625 .232 (.73)  
 Railway Gazette, No. 3, July 20, p. 87.  
 Sanitary coach on Buenos Ayres Great Southern Rail-  
 way. (350 words & fig.)

1928 621 .94 (.42)  
 Railway Gazette, No. 3, July 20, p. 88.  
 Pneumatic driving chucks for locomotive wheel la-  
 ces. (900 words & fig.)

1928 656 .256 (.42) & 656 .258 (.42)  
 Railway Gazette, No. 4, July 27, p. 112.  
 Re-signalling of Breydon viaduct, Midland & Great  
 Northern Railways Joint Committee. (1 100 words &  
 fig.)

1928 625 .232 (.42)  
 Railway Gazette, No. 4, July 27, p. 114.  
 Modern restaurant-car equipment. (350 words & fig.)

1928 621 .132.5 (.68)  
 Railway Gazette, No. 4, July 27, p. 115.  
 New three-cylinder « Santa Fe » type locomotive for  
 South Africa. (1 000 words & fig.)

1928 625 .232 (.06)  
 Railway Gazette, No. 4, July 27, p. 117.  
 Restaurant and sleeping-car services in central Eu-  
 rope. (1 100 words & fig.)

1928 725 .33 (.44)  
 Railway Gazette, No. 5, August 3, p. 138.  
 New car-repair shops, Paris-Orleans Railway. (600  
 words & fig.)

1928 621 .335 (.54)  
 Railway Gazette, No. 5, August 3, p. 140.  
 High-speed electric passenger locomotive for India.  
 (2 000 words & fig.)

1928 621 .132.6 (.43)  
 Railway Gazette, No. 5, August 3, p. 143.  
 Recent German tank locomotives. (800 words & fig.)

1928 656 .1 (.42) & 656 .2 (.42)  
 Railway Gazette, No. 5, August 3, p. 146.  
 The Great Southern Railways and motor transport  
 in the Irish Free State. (900 words & fig.)

1928 656 .261 (.44)  
 Railway Gazette, No. 5, August 3, p. 149.  
 Tractors replace horses for railway cartage in Paris.  
 (1 700 words & fig.)

1928 656 .255 (.42)  
 Railway Gazette, No. 6, August 10, p. 176.  
 A new development in single-line token working.  
 (3 000 words & fig.)

1928 385 .113 (.493)  
 Railway Gazette, No. 6, August 10, p. 179.  
 The Belgian Railway System. (400 words.)

1928 621 .133.7 (.42)  
 Railway Gazette, No. 6, August 10, p. 181.  
 Locomotive feed-water heating on the Great South-  
 ern Railways of Ireland. (900 words & fig.)

1928 621 .94 (.42)  
 Railway Gazette, No. 6, August 10, p. 182.  
 New machine tools for railway shops. (900 words &  
 fig.)

1928 656 .283 (.42)  
 Railway Gazette, No. 6, August 10, p. 189.  
 Railway accident report. Brent, London Midland &  
 Scottish: October 5, 1927. (850 words & fig.)

### Railway Magazine. (London.)

1928 621 .138.5 (.42) & 725 .33 (.42)  
 Railway Magazine, August, p. 121.  
 Reorganisation of Crewe locomotive works, London  
 Midland & Scottish Ry. (1 600 words & fig.)

1928 656 .222.1 (.42)  
 Railway Magazine, August, p. 131.  
 ALLEN (C. J.). — British locomotive practice and  
 performance. (5 200 words, 4 tables & fig.)

### Railway Mechanical Engineer. (New-York.)

1928 621 .132.3 (.73)  
 Railway Mechanical Engineer, July, p. 373.  
 Modified Mountain locomotive for the Santa Fe.  
 (3 800 words, 3 tables & fig.)

1928 621 .133.1  
 Railway Mechanical Engineer, July, p. 380.  
 BRUCE (A. W.). — The locomotive as a factor in  
 fuel economy. (3 000 words & fig.)

1928 621 .134.5 (.73)  
 Railway Mechanical Engineer, July, p. 383.  
 PARKER, Jr. (H. H.). — Grease cup cap for running repairs. (150 words & fig.)

1928 621 .13 (0)  
 Railway Mechanical Engineer, July, p. 384.  
 LIPETZ (A. I.). — Attempts to increase steam locomotive efficiency. (7 400 words & fig.)

1928 621 .134.2  
 Railway Mechanical Engineer, July, p. 391.  
 FRANKLIN (W. A.). — Something new in Walschaerts valve gear. (400 words & fig.)

1928 625 .26  
 Railway Mechanical Engineer, July, p. 392.  
 SWANSON (F. J.). — Car and operating department co-operation. (2 900 words & fig.)

1928 625 .26 (.73)  
 Railway Mechanical Engineer, July, p. 396.  
 The spot system of repairing freight cars. (2 300 words & fig.)

1928 625 .242 (.73)  
 Railway Mechanical Engineer, July, p. 400.  
 Chicago & Illinois Midland gondola. (900 words & fig.)

1928 621 .135.3 (.73)  
 Railway Mechanical Engineer, July, p. 409.  
 Spring plant of the Baltimore & Ohio at Mt. Clare shops. (2 200 words & fig.)

1928 621 .13 (0)  
 Railway Mechanical Engineer, August, p. 425.  
 Steam locomotive efficiency. (1 200 words.)

1928 621 .132.5 (.73)  
 Railway Mechanical Engineer, August, p. 427.  
 Burlington 2-10-4 freight engine. (1 500 words, tables & fig.)

1928 621 .132.1 (.42+.73)  
 Railway Mechanical Engineer, August, p. 431.  
 CANTLIE (K.). — British and American locomotives. (1 400 words.)

1928 621 .13 (0)  
 Railway Mechanical Engineer, August, p. 437.  
 LIPETZ (A. I.). — Attempts to increase steam locomotive efficiency. (5 400 words & fig.)

1928 625 .213  
 Railway Mechanical Engineer, August, p. 442.  
 Eliminating errors in truck side deflection tests. (900 words & fig.)

1928 625 .253  
 Railway Mechanical Engineer, August, p. 443.  
 Relation of the air brake to slack action. (1 700 words & fig.)

1928 625 .212 (.73)  
 Railway Mechanical Engineer, August, p. 445.  
 RITTENBERG (J. W.). — Repairing wheels on the Central of Georgia. (1 700 words & fig.)

1928 625 .235 (.73)  
 Railway Mechanical Engineer, August, p. 447.  
 Nashville, Chattanooga & St-Louis paint shop at Nashville. (2 800 words & fig.)

1928 621 .134.2 (.73)  
 Railway Mechanical Engineer, August, p. 458.  
 Valve and valve motion repairs. (4 300 words & fig.)

1928 621 .85 (.73)  
 Railway Mechanical Engineer, August, p. 463.  
 Time saving devices in Maine Central Air brake shop. (3 300 words & fig.)

### Railway Signaling. (Chicago.)

1928 656 .25 (.73)  
 Railway Signaling, August, p. 283.  
 Extensive three-year construction program completed on Long Island. (2 400 words & fig.)

1928 625 .258 (.73) & 656 .259 (.73)  
 Railway Signaling, August, p. 288.  
 Texas & Pacific installs retarders in new Lancaster yard. (2 300 words & fig.)

1928 656 .253 (.73)  
 Railway Signaling, August, p. 291.  
 Chesapeake & Ohio signaling and train control facilitate operation. (4 800 words & fig.)

1928 656 .253 (.73)  
 Railway Signaling, August, p. 296.  
 Great Northern replaces semaphores with color-light signals. (900 words & fig.)

1928 621 .39 (.73) & 656 .25 (.73)  
 Railway Signaling, August, p. 298.  
 Signal test bench built in Los Angeles & Salt Lake City. (800 words & fig.)

1928 656 .258 (.73)  
 Railway Signaling, August, p. 300.  
 FOX (E. N.). — Extensive interlocking changes made by Boston & Maine. (4 200 words & fig.)

### South African Railways and Harbours Magazine. (Johannesburg.)

1928 656 .212 (.68)  
 South African Rys. & Harbours Mag., July, p. 1120.  
 PRETORIUS (P. J.). — Kazerne. The largest goods depot on the continent of Africa. (3 800 words & fig.)



University of Illinois Bulletin. (Urbana.)

- 1928 696  
University of Illinois Bulletin, No. 46, July 17, p. 1.  
BABBITT (H. E.). — Tests on the hydraulics and pneumatics of house plumbing. (13 200 words, 17 tables & fig.)

In Spanish.

- Gaceta de los Caminos de hierro (Madrid).  
1928 656 .222.1  
Gaceta de los Caminos de hierro, n° 3556, 1° de Agosto, p. 253.  
La velocidad en los trenes. (650 palabras.)

Revista de Obras Públicas. (Madrid.)

- 1928 621 .33 (01)  
Revista de Obras Publicas, n° 15, 1° de Agosto, p. 283.  
JIMÉNEZ ONTIVEROS (F.). — Electrificación de ferrocarriles. Comentario necesario en propia defensa. (1 700 palabras.)

In Italian.

L'Ingegnere. (Roma.)

- 1928 388 (.45)  
L'Ingegnere, maggio, p. 269.  
VALLECCHI (U.). — Ragioni e scopi di un sistema sotterraneo di rapidi trasporti pubblici a Roma. (3 300 parole & fig.)  
1928 656 .1 & 656 .2  
L'Ingegnere, maggio, p. 282.  
LANINO (P.). — Automobili e ferrovie. Concorrenza coordinamento. (6 200 parole.)

Rivista delle Comunicazioni ferroviarie. (Roma.)

- 1928 385 (.45)  
Riv. delle Comunic. ferrov., n° 14, 15 luglio, p. 14.  
Le grandi comunicazioni ferroviarie col Mezzogiorno d'Italia dopo l'apertura all' esercizio dell' intera linea direttissima Roma-Napoli Centrale (via Formia-Aversa). (1 000 parole.)

- 1928 625 .1 (.45)  
Rivista delle Comunicazioni ferroviarie, n° 15, 1° agosto, p. 15.  
La nuova ferrovia Vittorio Veneto-Ponte sulle Alpi. (500 parole & fig.)

Rivista tecnica delle ferrovie italiane. (Roma.)

- 1928 385 (.072 (.45)  
Rivista tecnica delle ferrovie italiane, 15 luglio, p. 1.  
CUZZER (O.). — Laboratorio elettrotecnico dell' Istituto sperimentale delle Comunicazioni. (3 500 parole, 1 tavola & fig.)

- 1928 625 .13 (.45)  
Rivista tecnica delle ferrovie italiane, 15 luglio, p. 13.  
LEVI DE VEALI (D.). — L'allargamento del viadotto sul torrente Quadronna. (3 800 parole, 6 tabelle & fig.)

Rivista dei Trasporti. (Milano.)

- 1928 621 .33 (.45)  
Rivista dei Trasporti, maggio-giugno, p. 78.  
LO BALBO (P.). — La trazione elettrica ad accumulatori nelle Ferrovie Secondarie e nelle Tranvie in Italia. (7 200 parole & fig.)  
1928 385 (.06 (.45) & 625 .6 (06 (.45)  
Rivista dei Trasporti, maggio-giugno, p. 100.  
Il XXI Congresso internazionale delle Ferrovie e Tranvie d'interesse locale. (10 000 parole.)

In Dutch.

De Ingenieur. (Den Haag.)

- 1928 654  
De Ingenieur, N° 29, 21 Juli, p. E. 89.  
VOGELS (F. C. M.). — Enkelvoudige versus meervoudige sneltelegrafie. (2 000 woorden, 2 tabellen & fig.)  
1928 626 (.492)  
De Ingenieur, N° 31, 4 Augustus, p. B. 175.  
HEYNING (C. T. C.) & VAN DER BURGHT (J. H.). — Het kanaal van Wessem naar Nederweert. (4 000 woorden, 1 tafereel & fig.)

De Locomotief. (Amsterdam.)

- 1928 625 .617  
De Locomotief, n° 30, 25 Juli, S. 233.  
Amerikaansche tramrijtuigen van aluminium. (800 woorden & fig.)  
1928 669 .1  
De Locomotief, n° 31, 8 Augustus, p. 249.  
Hoogwaardig gietijzer. (2 400 woorden.)

Spoor- en Tramwegen. (Utrecht.)

- 1928 656 .211.5  
Spoor- en Tramwegen, n° 2, 24 Juli, p. 40.  
Richting-aanwijzing voor personen-stations. (900 woorden & fig.)

1928 385 .63 (.4)  
Spor- en Tramwegen, n° 3, 7 Augustus, p. 59.

ELIAS (P.). — De nieuwe Internationale Overeenkomst omtrent het Goederenvervoer per Spoorweg. (2 800 woorden.)

1928 625 .232  
Spor- en Tramwegen, n° 3, 7 Augustus, p. 68.

De nieuwe rijtuigen van den « Rheingold » express. (900 woorden & fig.)

1928 656 .254 (.494)  
Spor- en Tramwegen, n° 3, 7 Augustus, p. 74.

Nieuwe signalen voor onbewaakte overwegen. (700 woorden & fig.)

### In Polish.

### INŻYNIER KOLEJOWY. (Warszawa.)

1928 385 .571  
Inżynier Kolejowy, 1 Sierpnia, str. 232.

CYWINSKI (B.). — O braku inżynierow na kolejach. (3 000 słowa, 5 tablice & rys.)

1928 625 .142 (.438)  
Inżynier Kolejowy, 1 Sierpnia, str. 237.

WIKTOR (S.). — Jakich podkładów używać na Polskich Kolejach? (7 500 słowa, tablice & rys.)

### In Portuguese.

### Revista das Estradas de ferro. (Rio de Janeiro)

1928 656 .1 (.81) & 656 .2 (.81)  
Revista das Estradas de ferro, n° 72, 15 de Julho, p. 497.

As competições entre as estradas de ferro e as de rodagem. (1 100 palabras.)

1928 624 .32 (.81)  
Revista das Estradas de ferro, n° 73, 30 de Julho, p. 437.

A montagem da ponte metallica sobre o Rio Doce ligando o sul ao norte do Espirito Santo. (1 700 palabras & fig.)

1928 621 .13  
Revista das Estradas de ferro, n° 73, 30 de Julho, p. 463.

A evolução das locomotivas a vapor. (2 600 palabras & fig.)

# MONTHLY BIBLIOGRAPHY OF RAILWAYS <sup>(1)</sup>

PUBLISHED UNDER THE SUPERVISION OF

P. GHILAIN,

General secretary of the Permanent Commission of the International Railway Congress Association.

(NOVEMBER 1928)

[ 016 .385 (02) ]

## I. — BOOKS.

### In French.

- |   |                                |
|---|--------------------------------|
| 1928  | 621 .133.1                     |
| BLANC (F.), ingénieur des mines.<br>Etude analytique et comparative des charbons au point de vue de leurs impuretés.<br>Paris et Liège, Librairie polytechnique Ch. Béranger. In-8° de 65 pages, avec 29 fig. (Prix : 10 francs.)   |                                |
| 1928  | 62. (01 (06 (08                |
| CONGRES INTERNATIONAL POUR L'ESSAI DES MATERIAUX, Amsterdam, 1927.<br>La Haye, Martinus Nijhoff, 2 volumes. xvii-581 pages et ix-737. (Prix : £2-10-0.)   |                                |
| 1928  | 721 .9 (02                     |
| COSYN (Léon), architecte principal des Chemins de fer de l'Etat belge.<br>Exemples de calculs de constructions en béton armé. Paris et Liège, Béranger, éditeur. In-8°, 454 pages avec 235 fig. et 10 abaques. (Prix : 60 francs.)  |                                |
| 1928  | 665 .882                       |
| FRANJON (R.) & ROSEMBERG (P.).<br>Traité de soudure autogène et d'oxi-coupage. Paris, Office central de l'Acétylène et de la Soudure autogène. 320 pages et 250 gravures. (Prix : 15 francs.)   |                                |
| 1928  | 625 .245. (02 & 656 .212.6 (02 |
| MANFFSTENGEL (Georg von).<br>Etude théorique et pratique sur le transport et la manutention mécanique des matériaux et marchandises dans les usines, les magasins, les chantiers, les mines, etc. Tome II : Wagons pour marchandises. Culbuteurs des wagons. Voies à deux rails à traction continue. Transports aériens. Traduit sur la 3 <sup>e</sup> édition allemande par Georges Lehr, ingénieur, ancien élève de l'Ecole polytechnique.<br>Paris (6°), 15, rue des Saints-Pères; Liège, 1, quai de la Grande-Bretagne, Librairie polytechnique Ch. Béranger. In-8° (16 × 25 cm.), de 390 pages avec 555 fig. (Prix : 60 francs.) |                                |
| 1928  | 621 .116                       |
| HOEHN (E.), ingénieur en chef de l'Association suisse des propriétaires de chaudières à vapeur.<br>Résistance des fonds bombés.<br>Paris (6°), 15, rue des Saints-Pères; Liège, 1, quai de la Grande-Bretagne; Librairie polytechnique Ch. Béranger. In-8° (15 × 22 cm.), de 86 pages avec 45 fig. et 13 tableaux. (Prix : 20 francs.)  |                                |
| 1928  | 62. (02                        |
| IZART (J.), ingénieur-conseil.<br>Aide-mémoire de l'ingénieur-mécanicien.<br>Paris (6°), Dunod, éditeur, 92, rue Bonaparte, (13 × 21 cm.), viii-1264 pages, avec fig. et 1 planche hors texte. (Prix : 95 francs.)  |                                |
| 1928  | 385. (071.3                    |
| LABBÉ (Ed.), directeur général de l'Enseignement technique.<br>L'apprentissage et la taxe d'apprentissage.<br>Paris, Eyrolles, éditeur. 153 pages. (Prix : 10 francs.)  |                                |
| 1928  | 62. (01                        |
| NACHTERGAL (A.), ingénieur S. B. I. C. P., professeur à l'Ecole des Arts et Métiers d'Etterbeek (Belgique).<br>Petit formulaire de résistance des matériaux.<br>Paris (6°), 15, rue des Saints-Pères; Liège, 1, quai de la Grande-Bretagne, Librairie polytechnique Ch. Béranger. 3 <sup>e</sup> édition, revue et augmentée. (10.5 × 15 cm.) de 124 pages avec 130 fig. (Prix : fr. 6.50.)   |                                |
| 1928  | 385. (09.3 (.44)               |
| VANDEL (Jean).<br>Les Chemins de fer français depuis la guerre.<br>Paris (5°), Les Presses universitaires de France, 49, boulevard Saint-Germain. (16.5 × 25.5 cm.). 179 pages.   |                                |

(1) The numbers placed over the title of each book are those of the decimal classification proposed by the Railway Congress conjointly with the Office Bibliographique International, of Brussels. (See « Bibliographical Decimal Classification as applied to Railway Science », by WEISSENBRUCH in the number for November, 1897, of the *Bulletin of the International Railway Congress*, p. 1509).



In German.

- 1927 69 (02)  
**BRISKE (Rudolf), Dr.-Ing.**  
 Die Erdbebensicherheit von Bauwerken.  
 Berlin. Verlag von Wilhelm Ernst & Sohn. (25 × 34 Zm.), 31 Seiten mit 12 Abb. (Preis : 5 Rm.)
- 1928 721 .9 (02)  
**Eisen im Hochbau.**  
 Dusseldorf. Stahlwerks-Verband A.-G. VII. Auflage.  
 762 Seiten mit 1 150 Textabb. (Preis geb. : 12 Rm.)
- 1928 621. (02)  
**GERLACH (P.), NACHTWEH (C.), SANDEL (G.), SCHMIDT (A.) & WEIHE (H.).**  
 Lehrbuch des Maschinenbaues. — 2. Band : Elektrische Maschinen, Wasserkraftmaschinen, Hebe-  
 maschinen, Baumaschinen, Bearbeitungsmaschinen.  
 Leipzig. Verlag von Wilhelm Engelmann. XIV, 700  
 Seiten. (Preis geh. : 21 Rm.)
- 1928 385 (.43)  
**GIESE.**  
 Hauptfragen der Reichsbahnpolitik.  
 Berlin. Verlag von Julius Springer. (Preis geh. :  
 14 Rm.)
- 1928 385. (09.1) (.4)  
**Grosser Atlas der Eisenbahnen und Schifffahrt von Europa.**  
 Leipzig. Verlag von Johann Ambrosius Barth. 29 erg.  
 und verb. Auflage. IV, 8, XV, 328 Seiten; 68, 10 farb.  
 Karten-Bl.; 162, 89, II, X Seiten. (Preis : 50 Rm.)
- 1928 624. (02)  
**HARTMANN (F.).**  
 Aesthetik im Brückenbau unter bes. Berücks. d. Eisen-  
 brücken.  
 Leipzig. Verlag von Johann Ambrosius Barth. Gross  
 8°, v-148 Seiten mit 1 Titelb. und 116 Textabb. (Preis :  
 15 Rm.)
- 1928 691  
**Heft XI der Mitteilungen über Versuche des Österreichischen Eisenbeton-Ausschusses.**  
 Leipzig und Wien. Verlag Franz Deuticke. (Preis br. :  
 5 Rm.)
- 1927 656 .257  
**HENTZEN, Dr.-Ing. e. h.**  
 Das Einheitstellwerk.  
 Berlin. Dr. Arthur Tetzlaff, 398 Seiten, 445 Abb.,  
 3 Tafeln. (Preis geb. : 25 Rm.)
- 1928 621 .9 (02)  
**HÜLLE (F. W.).**  
 Die Grundzüge der Werkzeugmaschinen und der Metallbearbeitung. 1. Band : Der Bau der Werkzeugmaschinen.  
 Leipzig. Verlag von Johann Ambrosius Barth. 6. vermehrte Auflage. Gross 8°. IX-269 Seiten mit 512 Textabb. (Preis geb. : 6.50 Rm.)

- 1928 656 .233 (.  
**Internationales Güter-Kursbuch (I. G. K.).**  
 Würzburg, Universitätsdruckerei. (Preis : 3 Rm.)
- 1928 624 .2 (.4)  
**KAUFMAN (K.).**  
 Die Biegemomente der Verkehrsbelastung.  
 Hamburg. Verlag von Boysen und Maasch. 80 Seit  
 mit 19 Abb. (Preis : 3.50 Rm.)
- 1928 621  
**KEHRER (Otto), Dr.-Ing.**  
 Raschlaufende Oelmaschinen. Untersuchungen  
 Glühkocht-, Diesel- und Vergasermaschinen.  
 München. Verlag von R. Oldenbourg. 81 Text-Ab-  
 5 Indikatordiagrammtafeln, und 7 Entropiediagramm-  
 tafeln.
- 1928 385 .517.7 (.4)  
**KLEIN (Gustav), Reichsbahndirektor.**  
 Wohnungsfürsorge und Wohnungsverwaltung  
 Reichsbahn und Reichsbehörden.  
 Berlin. Verlag der Verkehrswissenschaftlichen Le  
 mittelgesellschaft bei der Deutschen Reichsbahn. 2.  
 Seiten mit 6 bildlichen Darstellungen. (Preis geb  
 10 Rm.)
- 1928 691. 02 & 721 .9 (.  
**LERCHE (K.).**  
 Aus der Praxis des Veranschlagens von Eisenbet  
 bauten.  
 Berlin, W. 8. Verlag von Wilhelm Ernst. 2. Aufla  
 76 Seiten mit 22 Abb. (Preis : 4 Rm.)
- 1928 385 .21 (.4)  
**NAPP-ZINN (A.).**  
 Binnenschifffahrt und Eisenbahn. Werden, Gestalt u  
 Problem ihres Verhältnisses im Deutschen Reich.  
 Leipzig. Verlag von Johann Ambrosius Barth. Gro  
 8°. VIII-126 Seiten. (Preis : 7.20 Rm.)
- 1928 621  
**Normen für den Hebezeugbau, neuere Konstruktio  
 und Unfallverhütungsvorschriften für Laufkräne. I.  
 gänzung zu der 7. Auflage « Die Hebezeuge » von St  
 dienrat BETHMAN.**  
 Braunschweig, Fr. Vieweg u. Sohn A. G. 63 Seit  
 (Preis geh. : 3 Rm.)
- 1928 6  
**PIRATH, Dr.-Ing.**  
 Die Eisenbahnen und ihre Stellung in der neuzeit  
 chen Entwicklung der Verkehrsmittel.  
 Berlin. Verlag G. Hachebeil. (Preis : 1.50 Rm.)
- 1928 656 .2  
**TEUBERT (Werner), Dr., Oberregierungsrat.**  
 Der Güterverkehr und seine Veränderungen in d  
 Nachkriegszeit.  
 Berlin. Verlag von Reimar Hobbing. (Preis : 7.50 Rm.)

**In English.**

1928 614 .8 (02)  
**Accident prevention for permanent-way men.**  
 London, W. 7., 62, Grove Avenue, Hanwell Publi-  
 shed by the Institute of Accident Prevention. (Price :  
 1 sh. 6 d. net.)

1928 656 .1 (.73) & 656 .2 (.73)  
**AMERICAN RAILWAY ASSOCIATION. Motor trans-  
 port division.**

Report of Sub-Committee on action of the State Rail-  
 road Commissions in allowing Railroads to coordinate  
 mail and highway service. Requirements for secural of  
 certificates of public necessity and convenience. Deci-  
 sions indicating commission policy.

New-York City. Apply at the Association.

1928 656 .25 (06 (08 (.73)  
**AMERICAN RAILWAY ASSOCIATION. Signal Section.**

Proceedings : advance notice eighty-third stated mee-  
 ting, Ambassador Hotel, Atlantic City, N.-Y., Sep-  
 tember 11, 12, 13, 1928.

New-York. Published by the Association, 30, Vesey  
 Street. 295 pages et fig.

1928 025 .4 (.54)  
**BARNETT (W. G.).**

Note on composite index numbers for Indian Rail-  
 ways.

Calcutta. Government of India Central Publication  
 Branch. (Price : As. 4 or 6 d.)

1928 385 .1 (.42)  
**British Railway Securities, 1928.**

Cardiff. Business Statistics Co. Ltd., The Exchange.  
 (Price : 2 sh. 6 d. net.)

1928 656 .2  
**BRUNNER (Christopher T.).**

The problem of motor transport. An economic ana-  
 lysis.

London, Ernest Benn, Ltd. (Price : 25 sh. net.)

1928 69 (02)  
**CANTELL (M. T.).**

Practical designing in reinforced concrete. Part I.  
 London, E. and F. N. Spon, Ltd. (Price : 15 sh. net.)

1928 627  
**CUNNINGHAM (Brysson).**

Port studies. With special reference to the Western  
 ports of the North Atlantic.

London, Chapman and Hall, Limited. (Price : 25 sh.  
 net.)

1928 621 .11 (02)  
**DARLING (Charles S.).**

Exhaust steam engineering.

London, Chapman and Hall, Limited. (Price : 30 sh.  
 net.)

1928 691  
**DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL  
 RESEARCH. Forest products research.**

Dry-rot in wood. Bulletin No. 1.

London. His Majesty's Stationery Office. (Price :  
 1 sh. 6 d. net.)

1928 385 .13 (.73)  
**DUDLEY (Arthur S.).**

The economics of railroad valuation.

Milwaukee, Wisc. Published by the Author, c/o Chi-  
 cago Milwaukee, St. Paul & Pacific, 94 pages.

1928 608  
**GRIFFITHS (A. W.).**

Patent law and practice.

London, W. C. 2, Stevens & Sons, Ltd. 119-120,  
 Chancery-lane. (Price : 7 sh. 6 d. net.)

1928 62. (08)  
**INSTITUTION OF CIVIL ENGINEERS.**

Engineering abstracts from the current periodical  
 literature of engineering and applied science, published  
 outside the United Kingdom. No. 36, July 1928.

London, S. W. 1. Published by the Association, Great  
 George Street, Westminster, 236 pages.

1928 656  
**JOHNSON (Emory R.), HUEBNER (Grover G.) &  
 LLOYD WILSON (G.).**

Principles of transportation. Part. I : Railroad ser-  
 vices. Part. II : Railroad business methods and orga-  
 nization. Part. III : Railroad rates. Part IV : Govern-  
 ment regulation of railroads. Part v : Motor and  
 highway transportation. Part VI : Transportation by  
 water (ocean and inland). Part VII : Air transporta-  
 tion.

New-York City. Published by D. Appleton & Co.  
 815 pages, indexed. (Price : \$5.00.)

1928 347 .763.4 (.42)  
**LESLIE (Alan), Ll. M., barrister-at-law.**

Law of transport by railway.

London, W. C. 2. Sweet & Maxwell Ltd, 2 & 3, Cham-  
 cery Lane. (10 1/2 x 6 3/4 x 2 3/4 inches), pages I to  
 LXX and 1 to 852. (Price : £2-10-0 net.)

1928 385 .(07 (.42)  
**LONDON SCHOOL OF ECONOMICS AND POLITICAL  
 SCIENCE.**

Lectures and classes on railway and cognate subjects.

London, W. C. 2 Apply at the School, Houghton Street,  
 Aldwych. One booklet in 8-vo (8 inch. x 5 1/2 inch.),  
 27 pages.

1928 385 .(07 (.42)  
**LONDON SCHOOL OF ECONOMICS AND POLITICAL  
 SCIENCE.**

Summary programme. Session 1928-29.

London, W. C. 2, Apply to the School, Houghton  
 Street, Aldwych. One booklet in 8°, (8 x 5 1/2 inch.),  
 59 pages. (Price : 6 d.)

1928 656 .211.7 (09)  
**PARKER (H.)**, captain, & **BOWEN (F. C.)**.  
 Mail and passenger steamships of the nineteenth century : The Macpherson collection with iconographical and historical notes.

London, S. E. 1. Sampson Low, Marston & Co., Ltd, 100 Southwark-street. (Price : £3-3 sh. net.)

1928 51. (08)  
**PEACE (J. B.)**, M. A.

Properties of steam and other vapours.

London. Published by Messrs. Deighton, Bell and Company, Ltd. (Price : 1 sh. net.)

1928 385 .(02 (.73)  
**Railroad facts No. 6**. A yearbook of railroad information, 1928 edition. Compiled by Western Railways' Committee on Public Relations.

Chicago, Ill. Published by Western Railways' Committee on Public Relations, 94 pages.

1928 624 .(02  
**SCOTT (W. L.) & SPICER (C. W. J.)**.

Reinforced concrete bridges. The practical design of modern reinforced concrete bridges, including notes on temperature and shrinkage effects.

London, Crosby Lockwood & Son. 2nd edition. (Price : 25 sh. net.)

1928 669  
**SMITHELLS (C. J.)**.  
 Impurities in metals.

London, Chapman and Hall, Ltd. xi-157 pages. (Price : 18 sh.)

1928 385. (09.3 (.73  
**STARR (John W.)**, Jr.  
 One hundred years of American railroading.  
 New York. Published by Dodd, Mead & Co. 336 pages. (Price : \$3.50.)

1928 51 (0  
**Steam tables**. Properties of saturated and superheated steam.  
 New York. The Superheater Company.

1928 621 .13 (09.1 (.42)  
**The locomotives of the Southern Railway (Eastern Section)**.

London, S. E. 1. Published by W. G. Tilling, 10 Great Dover Street. (Price : 2 sh. 6 d.)

1928 621 .11  
**« The Royal Scot »** and her forty-nine sister engines.  
 London. The London Midland & Scottish Ry. 66 pages. (Price : 1 sh.)

1928 656 .222.5 (.42)  
**VALE (Edmund)**.

The track of the Irish Mail. London Midland & Scottish route book No. 1, Euston to Holyhead.

London, Printed by McCorquodale & Co., Ltd. 72 pages. (Price : 1 sh.)

1928 347 .763.4 (.42)  
**WILLIAMS (Ernest E.)**.

Modern railway law.

London, W. C. 2, Stevens & Sons, Ltd., 119 and 120 Chancery Lane. (9 7/8 × 6 1/4 × 1 1/2 inches), 407 pages. (Price : 25 sh. net.)

1928 385 .(09.1 (.57)  
**WOOD (Junius B.)**.  
 Incredible Siberia.

New York. Published by Dial Press. 261 pages. (Price : \$4.00.)

### In Italian.

1928 621 .116 & 621 .133.  
**GENNARO CALCAGNI (Luigi)**, Prof. Dott.  
 La combustione e i combustibili.  
 Torino. Casa editrice S. Lattes & C°, via Garibaldi, 3. In-8°, xvi-492 pagine con 201 fig. (Prezzo : Lire 50.)

[ 016 .385. (05 )

## II. — PERIODICALS.

### In French.

#### Arts et Métiers. (Paris.)

1928 621 .114  
**Arts et Métiers**, septembre, p. 347.

**SAGET**. — Les récents perfectionnements des graisseurs mécaniques. (3 600 mots & fig.)

1928 725 .4  
**Arts et Métiers**, septembre, p. 356.  
**DAVIOT (S.)**. — Aménagement des ateliers de machines à travailler le bois. (2 000 mots).

#### Bulletin des transports internationaux par chemins de fer. (Berne.)

1928 385 .6  
**Bull. des transp. intern. par ch. de fer**, septemb., p. 328  
**C. I. M.** — Liste des lignes de chemins de fer et de services automobiles ou de navigation auxquelles s'applique la Convention internationale concernant le transport des marchandises par chemins de fer (C. I. M. du 23 octobre 1924. (1<sup>re</sup> édition, du 1<sup>er</sup> octobre 1928)



1928 385 .62  
Bull. des transp. intern. par ch. de fer, septemb., p. 360.  
C. I. V. — Liste des lignes de chemins de fer et de services automobiles et de navigation auxquelles s'applique la Convention internationale concernant le transport des voyageurs et des bagages par chemins de fer (C. I. V.) du 23 octobre 1924. (1<sup>re</sup> édition, du 1<sup>er</sup> octobre 1928).

1928 385 .113 (.485)  
Bull. des transp. intern. par ch. de fer, septemb., p. 433.  
Les Chemins de fer suédois pendant les exercices de 1924-1926. (300 mots & tableau).

### Bulletin de l'Union internationale des chemins de fer (Paris).

1928 385 .6  
Bull. de l'Union intern. des ch. de fer, juillet, p. 241.  
L'organisation des communications et du transit de la Société des Nations. (9 700 mots.)

1928 385 .113 (.42)  
Bull. de l'Union intern. des ch. de fer, juillet, p. 255.  
Les Chemins de fer de Grande-Bretagne pendant les années 1926 et 1927. (5 400 mots & tableaux.)

1928 656 .231 (.42)  
Bull. de l'Union intern. des ch. de fer, juillet, p. 274.  
La réforme des tarifs marchandises en Grande-Bretagne. (1 900 mots & 2 tableaux.)

### Chronique des transports. (Paris.)

1928 656 .1 (.3) & 656 .2 (.3)  
Chronique des transports, n° 16, 25 août, p. 10.  
Le rail et la route. (2 000 mots.)

1928 385 .1 (.42 + .44)  
Chronique des transports, n° 17, 10 septembre, p. 2.  
Deux pays, deux politiques. (1 400 mots.)

1928 385 .113 (.436)  
Chronique des transports, n° 17, 10 septembre, p. 21.  
Les résultats des Chemins de fer fédéraux autrichiens en 1927. (600 mots.)

1928 385. (.497.2)  
Chronique des transports, n° 17, 10 septembre, p. 30.  
La situation des Chemins de fer bulgares. (250 mots.)

1928 313 .385 (.73)  
Chronique des Transports, n° 17, 10 septembre, p. 31.  
Statistiques financières de l'exploitation des chemins de fer des Etats-Unis pour 1927. (500 mots.)

1928 385 .52 (.42)  
Chronique des transports, n° 18, 25 septembre, p. 2.  
La crise des réseaux britanniques et la réduction des salaires des agents de chemins de fer. (2 400 mots.)

1928 385 .113 (.44)  
Chronique des transports, n° 18, 25 septembre, p. 7.  
La répartition des dépenses des compagnies de chemins de fer. (1 200 mots.)

1928 385. (09) (.52)  
Chronique des transports, n° 18, 25 septembre, p. 30.  
Les progrès des Chemins de fer japonais depuis le tremblement de terre. (550 mots.)

### Génie civil. (Paris.)

1928 62. (01)  
Génie Civil, n° 2401, 18 août, p. 165.  
CAUFOURIER (P.). — L'enregistrement du travail élastique des matériaux. Elastographe électrique Mac Collum-Peters. (2 700 mots & fig.)

1928 62. (01)  
Génie Civil, n° 2401, 18 août, p. 171.  
LAGRANGE (D.) & ROSENTHAL (D.). — Influence de la forme des abouts de certains assemblages soudés, sur la valeur de la charge de rupture et sur la déformation. (450 mots & fig.)

1928 625 .13 (.44)  
Génie Civil, n° 2402, 25 août, p. 177.  
DELATTRE (P.). — Le viaduc en maçonnerie de la Bonne, sur la ligne de La Mure (Isère) à Gap (Hautes Alpes). (1 800 mots & fig.)

1928 621 .133.6  
Génie Civil, n° 2402, 25 août, p. 195.  
Nouveau régulateur pour locomotives à vapeur de la Superheater Co. (750 mots & fig.)

1928 625 .5  
Génie Civil, n° 2403, 1<sup>er</sup> septembre, p. 212.  
CRESTIN (F.). — Le funiculaire aérien de Cortina d'Ampezzo. Règlements divers concernant les funiculaires pour voyageurs. (2 700 mots & fig.)

1928 62. (01)  
Génie Civil, n° 2403, 1<sup>er</sup> septembre, p. 215.  
LÉGENS (L.). — Calcul de l'arc parabolique à deux rotules prolongé par des poutres non articulées, reposant sur appuis mobiles. (1 000 mots & fig.)

1928 621 .331 (.431)  
Génie Civil, n° 2404, 8 septembre, p. 225.  
La Centrale thermique Klingenberg, à Berlin. (2 600 mots & fig.)

1928 625 .143.2 & 625 .143.3  
Génie Civil, n° 2404, 8 septembre, p. 233.  
MARCOTTE (E.). — Le traitement thermique des rails en service. La lutte contre l'usure ondulatoire. (4 300 mots & fig.)

1928 624 .63 (.73)  
Génie Civil, n° 2404, 8 septembre, p. 236.  
CAUFORIER (P.). — Pont en béton armé sur le Mississippi entre Saint-Paul et Minneapolis (Etats-Unis). (1 800 mots & fig.)

1928 721 .9  
Génie Civil, n° 2405, 15 septembre, p. 254.  
FREYSSINET (E.). — L'amélioration des constructions en béton armé par l'introduction de déformations élastiques systématiques. (2 400 mots & fig.)

1928 62. (01)  
Génie Civil, n° 2405, 15 septembre, p. 259.  
ROGOFF (A.). — Calculs simplifiés de l'arc symétrique encastré aux naissances. (1 400 mots & fig.)

1928 626 .131.4 (.43)  
Génie Civil, n° 2406, 22 septembre, p. 269.  
Les excavateurs-portiques à câble pour l'exploitation des gisements de lignite. (2 200 mots & fig.)

1928 62. (01)  
Génie Civil, n° 2406, 22 septembre, p. 279.  
CHAUDY (F.). — Calcul des arcs et des poutres continues de hauteur variable à treillis en N. (1 600 mots & fig.)

1928 621 .332 (.44)  
Génie Civil, n° 2407, 29 septembre, p. 296.  
MASSONNEAU (G.). — Le canal d'amenée de l'usine d'Artouste (Basses-Pyrénées) de la Compagnie des chemins de fer du Midi. (2 700 mots & fig.)

1928 621 (.43)  
Génie Civil, n° 2407, 29 septembre, p. 301.  
SCHLESINGER (G.). — Comparaison des systèmes de tolérances employés en Allemagne (D. I. N.) et aux Usines Skoda (Tchéco-Slovaquie). (3 400 mots & fig.)

1928 62. (01 & 669)  
Génie Civil, n° 2407, 29 septembre, p. 308.  
Machine Vickers, à diamant pyramidal, pour les essais de dureté des métaux. (800 mots & fig.)

1928 388 (.431)  
Génie Civil, n° 2407, 29 septembre, p. 310.  
Le développement des transports en commun, à Berlin. (500 mots & fig.)

### La Science et la Vie. (Paris.)

1928 625 .4 (.44)  
La Science et la Vie, septembre, p. 177.  
FOURNIER (L.). — Le Métropolitain de Paris a aujourd'hui 30 ans. La technique de sa construction. Les lignes nouvelles. (4 200 mots & fig.)

1928 627 (.44)  
La Science et la Vie, septembre, p. 215.  
CAËL (J.). — Strasbourg est notre grand port des marches de l'Est. (4 000 mots & fig.)

1928 621 .86 (.43)  
La Science et la Vie, septembre, p. 226.  
Le plus grand pont roulant du monde pour le transbordement du charbon et du minerai. (350 mots & fig.)

1928 625 .1 (.44 + .45)  
La Science et la Vie, septembre, p. 227.  
MARCHAND (J.). — L'inauguration de la ligne Nice-Coni. (2 100 mots & fig.)

1928 624 .63 (.44)  
La Science et la Vie, septembre, p. 234.  
DONCIÈRES (R.). — Le plus beau pont en béton armé du monde. (2 300 mots & fig.)

1928 65  
La Science et la Vie, septembre, p. 239.  
LE CELTE (H.). — Une machine qui plie 3,400 télégrammes à l'heure. (700 mots & fig.)

### Le Correspondant des Techniciens et Professionnels des chemins de fer. (Saint-Dizier.)

1928 625 .141 & 625 .1  
Le Correspondant des Techn. et Profess. des ch. de fer 15 mars, p. 3.  
BERRARD. — Entretien de la voie. (2 800 mots & fig.)

1928 62. (01 & 691)  
Le Correspondant des Techn. et Profess. des ch. de fer 15 mars, p. 9.  
CAQUOT. — Note sur les essais de ciments et de bétons. (1 600 mots & fig.)

1928 656 .2  
Le Correspondant des Techn. et Profess. des ch. de fer 15 avril, p. 3.  
HARBULOT (M.). — La nécessité économique de la tarification dans les chemins de fer. (1 400 mots & fig.)

1928 385 .58  
Le Correspondant des Techn. et Profess. des ch. de fer 15 avril, p. 5.  
GALLOU. — Réduction du personnel des réseaux par la réduction du travail. (1 200 mots & fig.)

1928 625 .251  
Le Correspondant des Techn. et Profess. des ch. de fer 15 mai, p. 3.

CAPITAN (H.). — Sur le frottement ferroviaire (3 400 mots & fig.)

### Les Chemins de fer et les Tramways. (Paris.)

1928 621 .335 & 621 .4  
Les Ch. de fer et les tramways, septembre, p. 197.  
SPIESS (E.). — Automotrices Diesel-électriques (6 000 mots & fig.)

1928 621 .132.5 (.434)  
 Ch. de fer et les tramways, septembre, p. 204.  
 Locomotive à marchandises « Type 1-6-0 » des chemins de fer du Wurtemberg. (950 mots, 1 tableau & fig.)

1928 624. (01 (.44)  
 Ch. de fer et les tramways, septembre, p. 206.  
 Calcul et épreuves des ponts métalliques. Règlement français. (7 200 mots.)

1928 669  
 Ch. de fer et les tramways, septembre, p. 212.  
 CROZET (A.). — L'emploi du nickel et de ses alliages dans les chemins de fer et les tramways. (1 400 mots.)

1928 656 .256.3  
 Ch. de fer et les tramways, septembre, p. 213.  
 DUCHESNOY. — L'arrêt automatique des trains. (700 mots.)

## L'Industrie des voies ferrées et des transports automobiles. (Paris.)

1928 621 .331 & 621 .332  
 Ind. voies ferrées et transp. autom., septembre, p. 248.  
 CORTET. — Détermination d'un système de sous-stations et de feeders à courant continu destinés à l'alimentation d'un réseau de tramways (5 500 mots & fig.)

## Revue de l'Ecole polytechnique. (Bruxelles.)

1928 669 .1  
 Revue de l'Ecole polytechnique, juillet, p. 576.  
 ROUSSEAU (E.). — Etude du ferro-silicium. (3 800 mots & fig.)

## Revue générale des chemins de fer. (Paris.)

1928 656 .211 (.44)  
 Revue générale des chemins de fer, septembre, p. 275.  
 Les travaux d'agrandissement de la Gare de l'Est à Paris. (2 200 mots & fig.)

1928 385 .113 (.43)  
 Revue générale des chemins de fer, septembre, p. 321.  
 Les Chemins de fer allemands pendant le troisième exercice financier de la Reichsbahn (1927) d'après le rapport n° 7 du Commissaire des chemins de fer allemands à la Commission des Réparations. (7 500 mots & tableaux.)

1928 313 .385 (.44)  
 Revue générale des chemins de fer, septembre, p. 335.  
 Résultats obtenus en 1927 sur les réseaux des cinq compagnies principales des chemins de fer français (Nord, Est, Orléans, Paris-Lyon-Méditerranée et Midi). (8 tableaux.)

1928 625 .233 (.43)  
 Revue générale des chemins de fer, septembre, p. 369.  
 Emploi d'une turbo-dynamo montée sur la locomotive, pour l'éclairage des trains des chemins de fer du Reich. (700 mots & fig.)

## Revue universelle des mines, de la métallurgie, des travaux publics, des sciences et des arts appliqués à l'industrie. (Liège.)

1928 62. (01 & 621 .392  
 Revue universelle des mines, n° 4, 15 août, p. 149.  
 DUSTIN (H.). — Les assemblages des profilés par soudures. (6 700 mots & fig.)

1928 621 .4 (01  
 Revue universelle des mines, n° 5, 1<sup>er</sup> septembre, p. 197.  
 BOUFFART (M.). — Analyse thermique des moteurs à piston à explosion ou à vapeur. (10 500 mots & fig.)

## Revue universelle des transports et des communications. (Paris.)

1928 621 .132.8 (.68)  
 Revue univers. des transp. et des commun., mai, p. 34.  
 Les nouvelles locomotives Garratt-Union, type 4-6-2 + 2-6-4 des Chemins de fer de l'Afrique Australe. (900 mots & fig.)

1928 625 .614  
 Revue univers. des transp. et des commun., mai, p. 41.  
 VAN NOORBEECK. — Les perfectionnements récents aux rails de tramways. (950 mots.)

1928 621 .132.6 (.44)  
 Revue univers. des transp. et des commun., juillet, p. 54.  
 PAHIN (L. A. H.). — Les locomotives-tenders compound à surchauffe à 4 essieux et à 2 bogies porteurs des chemins de fer de Paris à Lyon et à la Méditerranée. (2 300 mots & fig.)

1928 625 .152  
 Revue univers. des transp. et des commun., juillet, p. 65.  
 LÆWENGUTH (E.). — Traversée de voies en charpente, à lames transversales, posées de champ. (450 mots & fig.)

In German.

## Archiv für Eisenbahnwesen. (Berlin.)

1928 656  
 Archiv für Eisenbahnwesen, Mai-Juni, S. 593.  
 PIRATH (K.). — Ziele und Wege der Eisenbahnbetriebswirtschaft. (7 000 Wörter.)



1928 385 (.47)  
Archiv für Eisenbahnwesen, Mai-Juni, S. 613.  
POHL (H.). — Das Eisenbahnrecht der U. d. S. S. R. insbesondere das neue Statut der russischen Eisenbahnen vom 1.X.27. (24.V.27). (10 700 Wörter.)

1928 385 .1 (.73)  
Archiv für Eisenbahnwesen, Mai-Juni, S. 725.  
STEUERNAGEL. — Die « Valuation » der Eisenbahnen in den U. S. A. (3 800 Wörter.)

1928 313 .385 (.42)  
Archiv für Eisenbahnwesen, Mai-Juni, S. 736.  
Die Eisenbahnen Grossbritanniens 1923 bis 1926. (Tabellen.)

1928 385 .113 (.494)  
Archiv für Eisenbahnwesen, Mai-Juni, S. 757.  
Die Eisenbahnen der Schweiz im Jahr 1925. (Tabellen.)

1928 656 .222.1 (.494)  
Archiv für Eisenbahnwesen, Mai-Juni, S. 766.  
JEZEWSKI (S. v.). — Die Fahrgeschwindigkeit der Schnellzüge in der Schweiz 1882-1927. (1 500 Wörter & 6 Tabellen.)

1928 385 .113 (.489)  
Archiv für Eisenbahnwesen, Mai-Juni, S. 775.  
Die Eisenbahnen in Dänemark in den Betriebsjahren 1925/26 und 1926/27. (Tabellen.)

1928 385 .113 (.47)  
Archiv für Eisenbahnwesen, Mai-Juni, S. 787.  
ROESNER (E.). — Die Eisenbahnen Lettlands im Jahr 1925/26. (Tabellen.)

1928 385 .113 (.47)  
Archiv für Eisenbahnwesen, Mai-Juni, S. 801.  
Die russischen Eisenbahnen im Wirtschaftsjahr 1924-1925. (1 200 Wörter.)

1928 313 .385 (.675)  
Archiv für Eisenbahnwesen, Mai-Juni, S. 809.  
Eisenbahnen und Schifffahrt in der belgischen Kongokolonie im Jahr 1925. (500 Wörter & Tabelle.)

1928 385. (01) (.67)  
Archiv für Eisenbahnwesen, Mai-Juni, S. 813.  
Ausbau der Zentralafrikanischen Eisenbahnen und seine Rückwirkung auf den Hafenverkehr in Portugiesisch-Ost und Westafrika. (700 Wörter & 1 Karte.)

1928 385 .113 (.68)  
Archiv für Eisenbahnwesen, Mai-Juni, S. 816.  
Südafrikanische Eisenbahnen. (1 400 Wörter.)

1928 313 .385 (.725)  
Archiv für Eisenbahnwesen, Mai-Juni, S. 819.  
Vergleichende Statistik des Betriebs der Bundesgerichtsbarkeit unterstehenden Eisenbahnen in Mexico in den Jahren 1923, 1924, 1925. (500 Wörter & Tabellen.)

## Elektrotechnische Zeitschrift. (Berlin)

1928 621 .333  
Elektrotechn. Zeitschrift, Heft 34, 23 August, S. 1247.  
BUTTLER (A.). — Überstromschutz bei Gleichstromlokomotiven. (3 900 Wörter & Abb.)

1928 621 .333  
Elektrotechn. Zeitschrift, Heft 36, 6. Sept., S. 1317.  
Fortschritte auf dem Gebiete der Schutzeinrichtungen für elektrische Energie-Uebertragungsanlagen. (5 000 Wörter.)

1928 621 .333  
Elektrotechn. Zeitschrift, Heft 37, 13. Sept., S. 1357.  
SCHIRM (O.). — Das induktive Zugbeeinflussungssystem mit Gleichstromerregung. (4 000 Wörter & Abb.)

1928 388 (.431) & 621 .33 (.431)  
Elektrotechn. Zeitschrift, Heft 38, 20. Sept., S. 1404.  
Erweiterung des Berliner Schnellbahnnetzes. (2 200 Wörter & Abb.)

## Glaser's Annalen. (Berlin.)

1928 385. (01) (.92)  
Glaser's Annalen, Heft 4, 15. August, S. 39.

WIDDECKE. — Wirtschaftliches und Technisches aus Niederländisch-Indien, insonderheit Java und seine Eisenbahnen. (3 000 Wörter & Abb.)

1928 625 .245 (.43 + .73)  
Glaser's Annalen, Heft 4, 15. August, S. 45.

BONDY (O.). — Grosskesselwagen in Deutschland und in den U. S. A. (2 300 Wörter & Abb.)

1928 621 .133.1  
Glaser's Annalen, Heft 5, 1. September, S. 57.

METZELTIN. — Zur Geschichte der Brennstaubeuerungen bei Lokomotiven (1 200 Wörter.)

## In English.

### Electric Railway Journal. (New-York.)

1928 625 .143.3 (.73) & 625 .173 (.73)  
Electric Railway Journal, No. 7, August 18, p. 250.  
WYSOR (W. W.). — Keeping ahead of corrugation. (1 600 words & fig.)

1928 625 .26 (.431)  
Electric Railway Journal, No. 7, August 18, p. 252.  
German State Railways build large shop. (500 words & fig.)

1928 621 .333 (.73)  
Electric Railway Journal, No. 7, August 18, p. 255.  
ZIMMERMAN (J. M.). — Making certain that field coils are assembled correctly. (1 400 words & fig.)

1928 621 .85 (.73)  
Electric Railway Journal, No. 7, August 18, p. 259.  
SQUIER (C. W.). — **Modern tools** make forge shop attractive. (1 400 words & fig.)

1928 625 .14 (01 (.73)  
Electric Railway Journal, No. 8, August 25, p. 292.  
NIXON (W. J.). — Divergence of special trackwork design hinders standardization. (1 700 words & fig.)

1928 625 .255 (.44)  
Electric Railway Journal, No. 8, August 25, p. 294.  
Regenerative braking tested on P. L. M. locomotives. (50 words & 1 table.)

1928 62. (01 (.73)  
Electric Railway Journal, No. 8, August 25, p. 295.  
SUMNER (M. R.) & BALCH (G. E.). — **Testing of** work ropes essential to safety. (700 words, 3 tables & fig.)

1928 621 .33 (.73) & 656 .2 (.73)  
Electric Railway Journal, No. 8, August 25, p. 297.  
Coast Cities Railway extends co-ordinated service. (800 words & fig.)

1928 388 (.44)  
Electric Railway Journal, No. 8, August 25, p. 301.  
JACKSON (W.). — **Paris Rapid Transit Lines** to be attended. (1 400 words & fig.)

1928 621 .338 (.44)  
Electric Railway Journal, No. 9, September 1, p. 329.  
Cleveland articulated cars make uniform loading possible. (2 300 words & fig.)

1928 725 .33 (.43)  
Electric Railway Journal, No. 9, September 1, p. 333.  
Hamburg Elevated increases facilities. (750 words & fig.)

1928 621 .338 (.73)  
Electric Railway Journal, No. 9, September 1, p. 338.  
TOBEY (S. B.). — **Reducing noises** in street cars. (400 words.)

1928 656  
Electric Railway Journal, No. 10, September 8, p. 369.  
STEVENS (R. P.). — **The need for public transportation** is assured. (2 900 words & fig.)

1928 621 .33 (06 (.73)  
Electric Railway Journal, No. 10, September 8, p. 372.  
STORRS (L. S.). — **Teamwork** : an active force in modern business. (2 200 words & fig.)

1928 656 .211 (.73)  
Electric Railway Journal, No. 10, September 8, p. 375.  
**Smoothing the way for the ride** prospect. (4 000 words & fig.)

1928 614 .8 (.73)  
Electric Railway Journal, No. 10, September 8, p. 381.  
BARNES (J. P.). — **Safety** : A strong appeal to employee and passenger. (2 400 words & fig.)

1928 656 .23 (0  
Electric Railway Journal, No. 10, September 8, p. 393.  
SACHSE (R.). — **Determining the proper price for the transportation product.** (4 200 words & fig.)

1928 621 .338 (.73)  
Electric Railway Journal, No. 10, September 8, p. 397.  
FAUST (C. A.). — **Recent steps in car development.** Where are they heading? (2 600 words & fig.)

1928 659 (.73)  
Electric Railway Journal, No. 10, September 8, p. 401.  
ST-CLAIR (L.). — **Selling the car rider in print.** (3 600 words & fig.)

1928 656 .2 (.73)  
Electric Railway Journal, No. 10, September 8, p. 405.  
GRAHAM (R. N.). — **Fact, not fancy, must guide in the use of the bus.** (2 400 words & fig.)

1928 621 .331 (.73)  
Electric Railway Journal, No. 10, September 8, p. 411.  
BALE (L. D.). — **The power department plays an important part in selling rides.** (3 900 words & fig.)

1928 625 .14 (.73)  
Electric Railway Journal, No. 10, September 8, p. 416.  
PATERSON (A. B.). — **Look to your track, it is the foundation of your business.** (2 200 words & fig.)

1928 621 .335 (.73)  
Electric Railway Journal, No. 10, September 8, p. 427.  
WEST (E. A.). — **The trackless trolley** has it a place? (1 700 words & fig.)

1928 659 (.4)  
Electric Railway Journal, No. 10, September 8, p. 431.  
BLAKE (H. W.). — **Maps help to sell transportation in Europe.** (1 900 words & fig.)

1928 625 .26 (.73)  
Electric Railway Journal, No. 10, September 8, p. 435.  
SQUIER (C. W.). — **Better maintenance equipment** insures better service. (3 300 words & fig.)

1928 621 .335 (.71)  
Electric Railway Journal, No. 11, September 15, p. 451.  
**Combined drum and bellows connection** features Montreal's articulated car. (2 000 words, 2 tables & fig.)

1928 656 .281 (.73)  
Electric Railway Journal, No. 11, September 15, p. 454.  
**Interborough accident** presents unusual features. (1 300 words & fig.)

1928 656 .23 (0  
Electric Railway Journal, No. 11, September 15, p. 457.  
SACHSE (R.). — **Relation of customer to seller true basis for rate structure.** (3 800 words & 3 tables.)

**Engineer. (London.)**

- 1928 669  
Engineer, No. 3788, August 17, p. 162.  
FINNIECOME (J. R.). — The flexibility of plain pipes. (2 800 words, tables & fig.)
- 1928 621 .133.7 (.42)  
Engineer, No. 3788, August 17, p. 178.  
Locomotive exhaust steam injector. (1 800 words & fig.)
- 1928 621 .335 (.931)  
Engineer, No. 3788, August 17, p. 182.  
Electric shunting locomotives. (800 words & fig.)
- 1928 621 .5  
Engineer, No. 3789, August 24, p. 206.  
Rotary and turbo compressors. (3 400 words & fig.)
- 1928 656 .211.7 (.62)  
Engineer, No. 3789, August 24, p. 208.  
A twin-screw motor ferry boat for egyptian service. (1 000 words & fig.)
- 1928 621 .9 (.42)  
Engineer, No. 3791, September 7, p. 251.  
Machine tool exhibition, Olympia. (5 400 words & fig.)
- 1928 656 .1 & 656 .2  
Engineer, No. 3791, September 7, p. 259.  
Railways and road transport. (1 500 words.)
- 1928 669 .1 (06 (.42)  
Engineer, No. 3791, September 7, p. 260.  
Non-ferrous metals in the shipping industry. (3 200 words.)
- 1928 621 .9 (.42)  
Engineer, No. 3791, September 7, Supplement, p. 1.  
British machine tools at the Olympia Exhibition. (17 000 words & fig.)
- 1928 62 (06 (.42)  
Engineer No. 3792, September 14, p. 290.  
Engineering features of the Zuyderzee works. (9 000 words.)
- 1928 621 .135. (01 & 625 .14 (01  
Engineer, No. 3793, September, 21, p. 320.  
Tank engines and the track. (2 400 words.)
- 1928 621 .87 (.42)  
Engineer, No. 3793, September 21, p. 322.  
Railway breakdown cranes. (1 100 words & fig.)
- 1928 625 .232 (.42)  
Engineer, No. 3793, September 21, p. 325.  
Third-class sleeping cars. (500 words & fig.)

- 1928 621 .116. (0  
Engineer, No. 3794, September 28, p. 339.  
World Fuel Conference. Inaugural proceedings. (13 000 words & 2 tables.)
- 1928 669. (06 (.42  
Engineer, No. 3794, September 28, p. 349.  
The Iron and Steel Institute in Spain. (3 700 words & fig.)
- 1928 62. (01 & 60  
Supplement to the Engineer No. 3794, Sept. 28, p. 13.  
The plastic flow of metals. (1 500 words.)
- 1928 60  
Engineer, No. 3794, September 28, p. 135.  
Electric annealing. (1 000 words.)
- 1928 62. (01 (.54) & 625 .143.2 (.5  
Engineer, No. 3794, September 28, p. 141.  
Testing of rails. (900 words, 2 tables & fig.)

**Engineering. (London.)**

- 1928 621 .9 (.93  
Engineering, No. 3266, August 17, p. 217.  
5-ft. shaping machine with boring and milling motions. (1 200 words & fig.)
- 1928 669  
Engineering, No. 3267, August 24, p. 246.  
Recent American work on metals at high temperatures. (1 800 words & fig.)
- 1928 656 .212.6 (.4  
Engineering, No. 3267, August 24, p. 40.  
Hand truck with hydraulic lifting gear. (1 000 words & fig.)
- 1928 656 .211.5 (.4  
Engineering, No. 3268, August 31, p. 251.  
Escalator construction at Waterloo station. (450 words & fig.)
- 1928 625 .4 (.4  
Engineering, No. 3268, August 31, p. 260.  
Aerial ropeway at Carrara, Italy. (1 200 words & fig.)
- 1928 621 .335 & 621 .  
Engineering, No. 3268, August 31, p. 265.  
Oil-electric trains for branch lines. (2 000 words.)
- 1928 621 .9 (.4  
Engineering, No. 3269, September 7, p. 279.  
The Machine tool and engineering exhibition. (17 000 words & fig.)
- 1928 385. (062 (.4  
Engineering, No. 3269, September 7, p. 300.  
The British Association at Glasgow. (500 words.)



- 1928 669. (06 (.42)  
Engineering, No. 3269, September 7, p. 300.  
Non ferrous metals in the shipping industry. (5 000 words.)
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- 1928 624 .63 (.45)  
Engineering, No. 3269, September 7, p. 303.  
Reinforced-concrete bridge over the Piave at Belluno, Italy. (1 800 words & fig.)
- 
- 1928 621 .116  
Engineering, No. 3270, September 14, p. 341.  
YARROW (H. E.). — The design and construction of high-pressure water-tube boilers. (3 000 words & 2 tables.)
- 
- 1928 01  
Engineering No. 3271, September 21, p. 367.  
Scientific abstracts. (2 300 words.)
- 
- 1928 669 .1  
Engineering, No. 3271, September 21, p. 368.  
Silchrome steel. (1 500 words.)
- 
- 1928 625 .232 (.42)  
Engineering, No. 3271, September 21, p. 374.  
Third-class sleeping cars; London and North Eastern Railway. (700 words & fig.)
- 
- 1928 621 .4  
Engineering, No. 3271, September 21, p. 375.  
CHORLTON (A. E. L.). — Oil engines for aircraft and railways. (1 900 words & fig.)
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- 1928 624 .1 (.73)  
Engineering, No. 3272, September 28, p. 383.  
Sheet pile cofferdams for the Arlington memorial bridge. (2 100 words & fig.)
- 
- 1928 621 .116 (.73)  
Engineering, No. 3272, September 28, p. 389.  
Pulverised fuel boiler at the Calumet power station, Chicago. (2 200 words & fig.)
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- 1928 621. (06  
Engineering, No. 3272, September 28, p. 401.  
The World Power Conference. (12 000 words.)
- 
- 1928 621 .4  
Engineering, No. 3272, September 28, p. 412.  
WITCHELL (E. F.). — Internal combustion engine efficiency and its determination by the aid of a chart. (500 words, 2 tables & fig.)

# Engineering News-Record. (New-York.)

- 1928 656 .214 (.73)  
Engineering News-Record, No. 8, August 23, p. 283.  
Belt-line railroad agreement for Los Angeles harbor. (50 words.)

- 1928 624 .51 (.73)  
Engineering News-Record, No. 9, August 30, p. 304.  
WOLFE (G. F.). — Ohio River suspension bridge at Steubenville, Ohio. (4 400 words & fig.)

- 1928 625 .13 (.73)  
Engineering News-Record, No. 9, August 30, p. 310.  
JACKSON (J. F.). — Floating a 300-ft bridge span into position. (750 words & fig.)

- 1928 656 .212 (.73)  
Engineering News-Record, No. 9, August 30, p. 312.  
New freight terminal at Houston, Tex., for Missouri-Kansas-Texas Lines. (1 700 words & fig.)

- 1928 624 .63 (.44)  
Engineering News-Record, No. 9, August 30, p. 325.  
SCOTT (W. L.). — Arch bridge unusual in design and construction. (1 200 words & fig.)

- 1928 625 .173 (.73)  
Engineering News-Record, No. 10, September 6, p. 350.  
Rebuilding street railway track at Cincinnati. (2 000 words & fig.)

- 1928 625 .7 (.73)  
Engineering News-Record, No. 10, September 6, p. 352.  
RABE (W. H.). — Reinforced approach slabs for highway bridges. (1 900 words & fig.)

- 1928 625 .142.2 (.73) & 691 (.73)  
Engineering News-Record, No. 10, September 6, p. 355.  
GREGORY (W. B.). — Treated timber still good after 45 years of exposure. (1 000 words, 2 tables & fig.)

- 1928 691 (.73)  
Engineering News-Record, No. 11, September 13, p. 380.  
REICHERT (G. D.). — Covered reservoir combines precast and poured concrete. (3 900 words & fig.)

# Great Western Railway Magazine. (London.)

- 1928 625 .13 (.42)  
Great Western Railway Magazine, September, p. 347.  
WHITLEY (H. S. B.). — The reconstruction of the land spans of the Royal Albert Bridge. (1 500 words & fig.)

- 1928 656 .24  
Great Western Railway Magazine, September, p. 359.  
Claims prevention. (1 400 words.)

# Locomotive Railway Carriage & Wagon Review. (London.)

- 1928 621 .132.3 (.54)  
Loc. Ry. Carriage & Wagon Review, 15 August, p. 240.  
Pacific type express locomotive, Indian State Railways. (700 words & fig.)

1928 621 .335 (.54)  
Loc. Ry. Carriage & Wagon Review, 15 August, p. 242.  
Passenger electric locomotive, Great Indian Peninsula Ry. (2 500 words & fig.)

1928 621 .134.2 (.54)  
Loc. Ry. Carriage & Wagon Review, 15 August, p. 246.  
Lentz poppet valve locomotive, Bengal Nagpur Ry. (1 100 words & fig.)

1928 621 .132.8 (.42)  
Loc. Ry. Carriage & Wagon Review, 15 August, p. 249.  
Industrial petrol locomotive : Associated Portland Cement Manufacturers, Ltd. (550 words & fig.)

1928 621 .133.1 (.42)  
Loc. Ry. Carriage & Wagon Review, 15 August, p. 266.  
New pulverising mill for powdered fuel. (1 500 words & fig.)

1928 625 .245 (.42)  
Loc. Ry. Carriage & Wagon Review, 15 August, p. 270.  
25-ton goods brake vans, Southern Ry. (250 words & fig.)

1928 621 .132.3 (.42)  
Loc. Ry. Carriage & Wagon Review, Sept. 15, p. 279.  
Three-cylinder express engine with Lentz valves, London & North Eastern Ry. (1 000 words & fig.)

1928 625 .216 (.43)  
Loc. Ry. Carriage & Wagon Review, Sept. 15, p. 280.  
Automatic coupler developments. (550 words & fig.)

1928 621 .136.1 (.54)  
Loc. Ry. Carriage & Wagon Review, Sept. 15, p. 282.  
Bogie tenders for the Bengal-Nagpur Ry. (550 words & fig.)

1928 621 .335 (.92)  
Loc. Ry. Carriage & Wagon Review, Sept. 15, p. 284.  
2-6 + 6-0 Mallet locomotive : Java State Rys. (500 words & fig.)

1928 621 .335 (.45)  
Loc. Ry. Carriage & Wagon Review, Sept. 15, p. 285.  
Battery locomotives for passenger service in Italy. (400 words & fig.)

1928 625 .616 (.42)  
Loc. Ry. Carriage & Wagon Review, Sept. 15, p. 288.  
ALLEN (C. J.). — Locomotive development on the 15-inch gauge. (2 100 words & fig.)

1928 621 .13 (.0)  
Loc. Ry. Carriage & Wagon Review, Sept. 15, p. 291.  
Increasing the efficiency of locomotives. (1 300 words & fig.)

1928 621 .133.8 (.42)  
Loc. Ry. Carriage & Wagon Review, Sept. 15, p. 294.  
Improvements in water gauges. (750 words & fig.)

1928 621 .93 (.42)  
Loc. Ry. Carriage & Wagon Review, Sept. 15, p. 29.  
A new gear cutting machine. (900 words & fig.)

1928 621 .132.6 (.42) & 621 .134.3 (.42)  
Loc. Ry. Carriage & Wagon Review, Sept. 15, p. 29.  
BREWER (F. W.). — Superheated tank engine (3 300 words.)

1928 621 .134  
Loc. Ry. Carriage & Wagon Review, Sept. 15, p. 30.  
A reversible booster. (400 words & fig.)

## London & North Eastern Railway Magazine. (London.)

1928 656 .1 (.42) & 656 .2 (.42)  
L. & N. E. Railway Magazine, September, p. 454.  
NAISBY (J. T.). — Passenger motor competition (2 000 words & fig.)

1928 621 .136.3 (.42)  
L. & N. E. Railway Magazine, September, p. 478.  
Water supplies for the non-stop Pacifics. (950 words & fig.)

## Mechanical Engineering. (New-York).

1928 621 .11  
Mechanical Engineering, September, p. 687.  
SHOUDY (W. A.). — A suggestion for rating steam boilers. (3 400 words & fig.)

## Modern Transport. (London.)

1928 625 .258 (.73) & 656 .259 (.73)  
Modern Transport, No. 492, August 18, p. 3.  
Freight car retarders on the New York Central Line (800 words & fig.)

1928 385 .113 (.494)  
Modern Transport, No. 492, August 18, p. 5.  
Swiss Federal Railways Financial results in 1927. Electrified Lines. Efforts to meet road competition (1 200 words.)

1928 656 .2 (.42)  
Modern Transport, No. 492, August 18, p. 17.  
Sleeping car services by road. (700 words & fig.)

1928 621 .335 (.73)  
Modern Transport, No. 493, August 25, p. 3.  
First oil-electric locomotive built for long-haul freight service. (2 200 words & fig.)

1928 621 .132.8 (.42)  
Modern Transport, No. 493, August 25, p. 5.  
Short-distance traffic in Ireland. Petrol rail cars for passengers. (1 000 words & fig.)

- 1928 621 .132.6 (.44)  
Modern Transport, No. 493, August 25, p. 7.  
New-type 4-8-4 four-cylinder compound tank engines  
for the P. L. M. (800 words & fig.)
- 1928 621 .33 (.44)  
Modern Transport, No. 494, September 1, p. 3.  
Railway electrification in Europe. The Midi Railway  
of France. (1900 words & fig.)
- 1928 656 .2 (.73)  
Modern Transport, No. 494, September 1, p. 5.  
Petrol-electric buses in Philadelphia. (2200 words  
& fig.)
- 1928 656 .1 & 656 .2  
Modern Transport, No. 495, September 8, p. 2.  
Rail cars or buses. (1000 words.)
- 1928 656 .1 (.73) & 656 .2 (.73)  
Modern Transport, No. 495, September 8, p. 2.  
American Railways and road competition. (900  
words.)
- 1928 385 .11 (.68)  
Modern Transport, No. 495, September 8, p. 3.  
Beira, Mashonaland and Rhodesia Railways' satis-  
factory year. (1700 words & fig.)
- 1928 656 .1 (.73) & 656 .2 (.73)  
Modern Transport, No. 495, September 8, p. 4.  
Road-rail coordination in New England. (2100 words  
& fig.)
- 1928 656 .2 (.73)  
Modern Transport, No. 495, September 8, p. 17.  
Night travel by road. (1200 words & fig.)
- 1928 385. (09.1 (.45)  
Modern Transport, No. 496, September 15, p. 3.  
Railway developments in Italy. Remarkable progress  
provision of new stations, bridges and rolling stock.  
(800 words & fig.)
- 1928 656 .1 & 656 .2  
Modern Transport, No. 496, September 15, p. 9.  
FENELON (Dr. K. G.). — Some aspects of road and  
rail transport. (3400 words.)
- 1928 656  
Modern Transport, No. 496, September 15, p. 11.  
Transport problems and British Association. (1500  
words.)
- 1928 656 .1 (.73) & 656 .2 (.73)  
Modern Transport, No. 496, September 15, p. 14.  
Modern transport in the United States. Co-ordina-  
tion in New Jersey. (3300 words & fig.)
- 1928 385 .11 (.60)  
Modern Transport, No. 497, September 22, p. 3.  
Nigerian Railways. Continued progress and develop-  
ment. (1500 words & fig.)

- 1928 625 .232 (.42)  
Modern Transport, No. 497, September 22, p. 4.  
Third class sleeping cars for British railways. (1500  
words & fig.)
- 1928 625 .245 (.42)  
Modern Transport, No. 497, September 22, p. 7.  
New type carriage trucks for London & North Eas-  
tern Ry. (400 words & fig.)
- 1928 656 .254 (.42)  
Modern Transport, No. 498, September 29, p. 7.  
Automatic telephony at Liverpool street. (1800  
words & fig.)
- 1928 621 .125 (.42)  
Modern Transport, No. 498, September 29, p. 9.  
Economical method of marine propulsion. (600 words  
& fig.)
- 1928 621. (06 & 621 .116  
Modern Transport, No. 498, September 29, p. 12.  
World power conference and the fuel problem. (1800  
words.)
- 1928 656 .2 (.73)  
Modern Transport, No. 498, September 29, p. 2.  
Modern transport in the United States. (4000 words  
& fig.)
- 1928 621 .132.8 (.62)  
Modern Transport, No. 498, September 29, p. 5.  
Articulated steam rail cars. (1500 words & fig.)

### Railway Age. (New-York.)

- 1928 656 .2 (.73)  
Railway Age, No. 7, August 18, p. 295.  
Handling 560 per cent increase in traffic in 14 years.  
(3200 words, 4 tables & fig.)
- 1928 625 .13 (.73)  
Railway Age, No. 7, August 18, p. 301.  
Arch crossing over boulevard presents unique problem.  
(2500 words & fig.)
- 1928 656 .211.5 (.73)  
Railway Age, No. 7, August 18, p. 304.  
New York Central uses new indicator. (400 words  
& fig.)
- 1928 625 .142.2 (.73) & 691 (.73)  
Railway Age, No. 7, August 18, p. 307.  
Timber preservation shows growth. (1200 words &  
3 tables.)
- 1928 656 .257 (.73)  
Railway Age, No. 7, August 18, p. 309.  
COUNTY (A. J.). — The Pennsylvania's expense  
budget. (4700 words & fig.)



1928 385 .3 (.73)  
 Railway Age, No. 7, August 18, p. 313.  
 Illinois Chamber of Commerce told railway needs.  
 (2 100 words.)

1928 621 .132.8  
 Railway Age, No. 7, August 18, p. 315.  
 Ljungström turbine locomotive. (2 000 words, 3 tables & fig.)

1928 656 .211.4 (.73) & 725 .31 (.73)  
 Railway Age, No. 8, Section one, August 25, p. 337.  
 Boston & Maine opens first unit of new passenger station at Boston. (3 700 words & fig.)

1928 621 .139 (.73), 625 .18 (.73) & 625 .27 (.73)  
 Railway Age, No. 8, Section one, August 25, p. 347.  
 New York Central conducts large salvage operations.  
 (3 000 words & fig.)

1928 621 .137 .1  
 Railway Age, No. 8, Section one, August 25, p. 353.  
 ROESCH (F. P.). — Why blame the stoker? (2 500 words.)

1928 385. (07 .11 (.73)  
 Railway Age, No. 8, Section one, August 25, p. 355.  
 Summer course for railroad men a success. (1 700 words & fig.)

1928 656 .24  
 Railway Age, No. 8, Section one, August 25, p. 357.  
 GREEN (A. L.). — Future possibilities in claim prevention still great. (2 800 words & fig.)

1928 621 .133.1 (.73) & 621 .138.2 (.73)  
 Railway Age, No. 8, Section one, August 25, p. 361.  
 McAULIFFE (E.). — The storage of railway coal.  
 (1 800 words & fig.)

1928 656 .1 (.73) & 656 .2 (.73)  
 Railway Age, No. 8, Section two, August 25, p. 377.  
 LITTLEFIELD (R. J.). — Boston & Maine operates coach and train tours. (1 000 words & fig.)

1928 656 .1 (.73) & 656 .2 (.73)  
 Railway Age, No. 8, Section two, August 25, p. 379.  
 Efficiency marks operation of Denver & Rio Grande Western subsidiary. (2 000 words & fig.)

1928 625 .251  
 Railway Age, No. 8, Section two, August 25, p. 383.  
 HUKILL (H. D.). — Power brakes for automobiles.  
 (2 600 words & fig.)

1928 656 .261 (.73)  
 Railway Age, No. 8, Section two, August 25, p. 386.  
 Interstate Commerce Commission reports on St-Louis trucking investigation. (6 000 words & fig.)

1928 656 .1 (.73) & 656 .2 (.73)  
 Railway Age, No. 8, Section two, August 25, p. 394.  
 BUDD (R.). — More passenger traffic going to the highways. (800 words.)

1928 347 .763 (.7  
 Railway Age, No. 8, Section two, August 25, p. 3  
 Commission decisions analysed. (3 400 words.)

1928 621 .111 (.7  
 Railway Age, No. 9, September 1, p. 403.  
 Ironing out a mountain railway. (5 000 words, tab & fig.)

1928 621 .132.3 (.7  
 Railway Age, No. 9, September 1, p. 411.  
 Baltimore & Ohio « President Cleveland » locomotive.  
 (1 700 words, 1 table & fig.)

1928 656 .212.8 (.7  
 Railway Age, No. 9, September 1, p. 414.  
 Accelerating record work to meet increased car speed  
 (950 words & fig.)

1928 625 .232 (.7  
 Railway Age, No. 9, September 1, p. 419.  
 Two North Western passenger trains newly equipped  
 (1 000 words & fig.)

1928 625 .162 (.73) & 656 .259 (.7  
 Railway Age, No. 9, September 1, p. 426.  
 RATCLIFF (T. R.). — Crossing gates replaced by flashing-light signals. (1 000 words & fig.)

1928 621 .335 (.7  
 Railway Age, No. 10, September 8, p. 444.  
 McGEE (P. A.). — Performance of motor-generator locomotives. (3 900 words, 1 table & fig.)

1928 625 .232 (.7  
 Railway Age, No. 10, September 8, p. 448.  
 Semi-double-deck railroad coach. (300 words & fig.)

1928 625 .176 (.7  
 Railway Age, No. 10, September 8, p. 452.  
 Novel methods used in widening narrow gage lines  
 (1 300 words & fig.)

1928 625 .151 (.7  
 Railway Age, No. 10, September 8, p. 455.  
 SMITH (B. L.). — South Shore Line uses spring switches on heavy traffic line. (1 500 words & fig.)

1928 385. (07.2 (.7  
 Railway Age, No. 10, September 8, p. 457.  
 Missouri-Kansas-Texas expands test work. (2 000 words, tables & fig.)

1928 625 .232 (.7  
 Railway Age, No. 10, September 8, p. 463.  
 Business car for the Gulf, Mobile & Northern. (1 000 words & fig.)

1928 621 .132.8 (.7  
 Railway Age, No. 10, September 8, p. 465.  
 Buda develops heavy-duty motor car. (500 words & fig.)

1928 656 .212.5 (.73)  
 Railway Age, No. 11, September 15, p. 481.  
 Texas & Pacific **terminal** embodies noteworthy in-  
 novations. (600 words & fig.)

1928 614 .8 (.73)  
 Railway Age, No. 11, September 15, p. 488.  
 Gulf, Mobile & Northern improves **safety** 80 per cent.  
 (1 100 words.)

1928 656 .211.7 (.73)  
 Railway Age, No. 11, September 15, p. 492.  
 A multiple-deck vessel for **car ferry service**. (450  
 words.)

1928 625 .232 (.73)  
 Railway Age, No. 11, September 15, p. 493.  
 Milwaukee gets new **club-cars**. (650 words & fig.)

1928 625 .142.2 (.73)  
 Railway Age, No. 11, September 15, p. 497.  
 Wanted: grade marking of **railway lumber**. (3 400  
 words & fig.)

1928 656 .25 (06) (.73)  
 Railway Age, No. 11, September 15, p. 500.  
**Signal section**, American Railway Association, con-  
 venes at Atlantic City. (3 000 words, 3 tables & fig.)

#### . Railway Engineer. (London.)

1928 621 .13  
 Railway Engineer, September, p. 314.  
**Experimental steam locomotives**. (750 words.)

1928 621 .138.3  
 Railway Engineer, September, p. 314.  
 Maintenance of locomotive **boiler tubes**. (750 words.)

1928 656 .253 (.42)  
 Railway Engineer, September, p. 326.  
**Safety indicator for railways**. (350 words.)

1928 621 .132.8 (.68)  
 Railway Engineer, September, p. 327.  
**Garratt passenger locomotive** for the South African  
 Railways. (400 words & fig.)

1928 656 .211 (.485) & 725 .31 (.485)  
 Railway Engineer, September, p. 337.  
**Reconstruction of Stockholm Station**, Swedish State  
 Rys. (1 500 words.)

1928 624. (0, 625 .142.4 & 691  
 Railway Engineer, September, p. 339.  
 BROWN (C. J.). — Developments in the use of **mate-**  
**rials in railway engineering**. (2 100 words.)

1928 621 .335 (.42)  
 Railway Engineer, September, p. 342.  
**High-speed electric passenger locomotive** for India.  
 (1 900 words & fig.)

1928 656 .283 (.42)  
 Railway Engineer, September, p. 347.

**Railway accidents report**: Plaistow, London Midland  
 & Scottish: September 19, 1927. Den of Cowie via-  
 duct, between Muchalls and Stonehaven, L. M. S.: Oc-  
 tober 3, 1927. (2 500 words & fig.)

#### Railway Engineering & Maintenance. (Chicago.)

1928 625 .142  
 Railway Engineering & Maintenance, September, p. 372.  
 SCHRENK (H. von). — What causes mechanical de-  
 terioration of ties? (4 000 words & fig.)

1928 621 .13 (0 (.73) & 625 .143.1 (.73)  
 Railway Engineering & Maintenance, September, p. 376.  
**57 years of progress**. (100 words & fig.)

1928 691 (.73)  
 Railway Engineering & Maintenance, September, p. 377.  
 How long will **fence posts** last? (2 300 words & fig.)

1928 625 .13 (.73)  
 Railway Engineering & Maintenance, September, p. 381.  
 CURTISS (L. B.). — Three stages in the life of a  
 viaduct. (1 600 words & fig.)

1928 625 .175 (.73)  
 Railway Engineering & Maintenance, September, p. 384.  
 KNOWLES (C. R.). — Taking the slack out of **motor**  
**car operation**. (3 400 words & fig.)

1928 625 .144.4  
 Railway Engineering & Maintenance, September, p. 387.  
 BANION (E. L.). — Should rail be laid with section  
 gangs? (1 100 words.)

1928 625 .123 (.73)  
 Railway Engineering & Maintenance, September, p. 388.  
 ROBINSON (E. F.). — Consistent program improves  
 track drainage. (1 700 words & fig.)

1928 625 .123 (.73)  
 Railway Engineering & Maintenance, September, p. 390.  
 Installing a **drain pipe** through a levee without  
 trenching. (1 000 words & fig.)

#### Railway Gazette. (London.)

1928 656 .25 (0 (.82)  
 Railway Gazette, No. 7, August 17, p. 203.  
**Signalling on the Buenos Ayres & Pacific Railway**.  
 (1 000 words.)

1928 656 .21 (.54)  
 Railway Gazette, No. 7, August 17, p. 204.  
**New station** at Lucknow, East Indian Railway.  
 (1 500 words & fig.)

1928 625 .258 (.73) & 656 .259 (.73)  
 Railway Gazette, No. 7, August 17, p. 206.  
 All-electric car retarders at Mechanicville, Boston & Maine Railroad. (2 200 words & fig.)

1928 625 .245 (.42) & 656 .261 (.42)  
 Railway Gazette, No. 7, August 17, p. 212.  
 Road-rail transport on the Great Western Railway. (550 words & fig.)

1928 656 .256 (.42)  
 Railway Gazette, No. 7, August 17, p. 231.  
 Semi-automatic signalling on the Bromley-Barking section of the London Midland & Scottish Railway. (3 000 words & fig.)

1928 621 .132.3 (.42)  
 Railway Gazette, No. 7, August 17, p. 242.  
 New 4-4-0 type locomotives, London Midland & Scottish Ry. (250 words & fig.)

1928 625 .143.1  
 Railway Gazette, No. 9, August 31, p. 254.  
 Heavier steel rails. (250 words.)

1928 621 .135. (01 (.42) & 621 .135.2 (.42)  
 Railway Gazette, No. 9, August 31, p. 261.  
 Flanges of locomotive tyres. (1 000 words & fig.)

1928 385. (061.4 & 656 .1 (.73)  
 Railway Gazette, No. 9, August 31, p. 266.  
 Motor transport and United States Railways. (1 000 words.)

1928 656 .1 (.44) & 656 .261 (.44)  
 Railway Gazette, No. 9, August 31, p. 269.  
 French Railways and motor road transport. (2 600 words & fig.)

1928 385 .587  
 Railway Gazette, No. 10, September 7, p. 288.  
 Railway management. (1 200 words.)

1928 625 .172 (.42)  
 Railway Gazette, No. 10, September 7, p. 291.  
 Weed-killing on an Irish railway. (400 words & fig.)

1928 656 .222 (.4)  
 Railway Gazette, No. 10, September 7, p. 295.  
 The development of Pullman car services. (1 800 words & fig.)

1928 385 .59 (.42)  
 Railway Gazette, No. 10, September 7, p. 297.  
 Census of Railway employees. (200 words & table.)

1928 621 .95 (.42)  
 Railway Gazette, No. 10, September 7, p. 299.  
 Drilling machine for fishplates. (500 words & fig.)

1928 625 .143.4  
 Railway Gazette, No. 10, September 7, p. 300.  
 Rail joint shims. (700 words & fig.)

1928 625 .245 (.46)  
 Railway Gazette, No. 10, September 7, p. 301.  
 New hopper ballast wagons for the Cordoba Central Ry. (600 words & fig.)

1928 385. (09.1 (.7)  
 Railway Gazette, No. 10, September 7, p. 302.  
 The United Railways of the Havana. (300 words & fig.)

1928 385 .525 (.9)  
 Railway Gazette, No. 11, September 14, p. 323.  
 WALKER (R. P.). — Payment of staff, Federated Malay States Railways. (750 words.)

1928 654 (.5)  
 Railway Gazette, No. 11, September 14, p. 324.  
 Indian Railway publicity. (1 000 words.)

1928 625 .244 (.7)  
 Railway Gazette, No. 11, September 14, p. 325.  
 Refrigerated transport in America. (1 300 words)

1928 385. (09.1 (.8)  
 Railway Gazette, No. 11, September 14, p. 326.  
 The Taltal Railway. (1 000 words & fig.)

1928 621 .9 (.4)  
 Railway Gazette, No. 11, September 14, p. 329.  
 Machine tool exhibition at Olympia. (2 200 words & fig.)

1928 385 .4 (.8)  
 Railway Gazette, No. 12, September 21, p. 351.  
 Traffic control, Central Argentine Railway. (2 600 words & fig.)

1928 656 .225 (.44)  
 Railway Gazette, No. 12, September 21, p. 354.  
 Transport of perishable produce on the French State Railways. (800 words.)

1928 625 .232 (.42)  
 Railway Gazette, No. 12, September 21, p. 355.  
 Third-class sleeping cars in Great Britain. (2 200 words & fig.)

1928 625 .245 (.42)  
 Railway Gazette, No. 12, September 21, p. 359.  
 New covered carriage trucks, London & North Eastern Ry. (400 words & fig.)

1928 621 .132.3 (.42)  
 Railway Gazette, No. 12, September 21, p. 360.  
 New Pacific locomotives, London & North Eastern Ry. (250 words, table & fig.)

1928 656 .1 & 656 .  
 Railway Gazette, No. 13, September 28, p. 378.  
 Overseas railways and road transport. (900 words.)

1928 624. (  
 Railway Gazette, No. 13, September 28, p. 378.  
 Types of bridges. (500 words.)



1928 656 .254 (.42)  
 Railway Gazette, No. 13, September 28, p. 383.  
 Relay **automatic telephones** on the London & North  
 Eastern Ry. (1 500 words & fig.)

1928 621 .132.8 (.62)  
 Railway Gazette, No. 13, September 28, p. 387.  
 Articulated **steam rail cars** for Egypt. (1 600 words  
 & fig.)

1928 656 .1 (.42) & 656 .2 (.42)  
 Railway Gazette, No. 13, September 28, p. 390.  
 Road and rail transport. (2 900 words.)

1928 656 .1 (.44) & 656 .2 (.44)  
 Railway Gazette, No. 13, September 28, p. 393.  
 French railways and **motor road transport**. (1 300  
 words & fig.)

1928 656 .1 (.67) & 656 .2 (.67)  
 Railway Gazette, No. 13, September 28, p. 396.  
 Road **motor transport**, Kenya and Uganda Rys. (650  
 words & fig.)

### Railway Magazine. (London.)

1928 385. (09.1) (.52)  
 Railway Magazine, September, p. 191.  
 BURNETT OF LEYS (Sir James). — **Railways in**  
 Manchuria. (2 300 words & fig.)

1928 656 .222.1 (.42)  
 Railway Magazine, September, p. 213.  
 ALLEN (C. J.). — **British locomotive practice and**  
**performance**. (4 800 words, 1 table & fig.)

### Railway Mechanical Engineer. (New-York.)

1928 625 .246 (.73)  
 Railway Mechanical Engineer, September, p. 482.  
 The life of all-steel **freight cars**. (900 words.)

1928 621 .132.8 (.43)  
 Railway Mechanical Engineer, September, p. 484.  
 GRADENWITZ (A.). — **Pulverized coal burners** in  
 Germany. (1 500 words & fig.)

1928 621 .133.2 (.73)  
 Railway Mechanical Engineer, September, p. 488.  
 Special **firebox** for oil-burning locomotives. (1 800  
 words & fig.)

1928 621 .132.5 (.73)  
 Railway Mechanical Engineer, September, p. 491.  
 Twenty **2-8-4 type locomotives** for the Boston &  
 Maine. (1 300 words, 1 table & fig.)

1928 621 .133.4 (.73) & 621 .133.5 (.73)  
 Railway Mechanical Engineer, September, p. 493.  
 JACKSON (J. R.). — **The locomotive front-end** in its  
 relation to fuel economy. (4 100 words & fig.)

1928 656 .2 (.42 + .73)  
 Railway Mechanical Engineer, September, p. 497.  
 Comparison of American and British **railway prac-**  
**tices**. (3 200 words.)

1928 625 .26 (.73)  
 Railway Mechanical Engineer, September, p. 500.  
 Rock Island **passenger-car shop devices** save labor.  
 (1 000 words & fig.)

1928 625 .235  
 Railway Mechanical Engineer, September, p. 502.  
 Enamel for finishing **coach bodies**. (800 words &  
 fig.)

1928 621 .92 (.73)  
 Railway Mechanical Engineer, September, p. 503.  
 New Haven machine for rolling **car journals**. (400  
 words & fig.)

1928 625 .235 (.73)  
 Railway Mechanical Engineer, September, p. 506.  
 ROBERTSON (D. D.). — **Improving wooden passen-**  
**ger equipment**. (2 500 words & fig.)

1928 625 .26 (.73)  
 Railway Mechanical Engineer, September, p. 509.  
 A **modern shop** equipped to maintain 550 special  
 cars used as camp quarters for line construction forces.  
 (2 700 words & fig.)

1928 621. (06) (.73)  
 Railway Mechanical Engineer, September, p. 515.  
 Blacksmith foremen discuss **problems**. (5 200 words  
 & fig.)

1928 621 .9 (.73)  
 Railway Mechanical Engineer, September, p. 520.  
 SALMON (W.). — **Device for machining locomotive**  
**packing rings**. (550 words & fig.)

1928 725 .33 (.73)  
 Railway Mechanical Engineer, September, p. 521.  
 Big Four Riverside **terminal** at Cincinnati. (2 200  
 words, 2 tables & fig.)

1928 385 .524 (.73)  
 Railway Mechanical Engineer, September, p. 525.  
 Bangor & Aroostook **bonus system**. (2 400 words  
 & fig.)

1928 656 .259 (.73)  
 Railway Mechanical Engineer, September, p. 530.  
 An electric **speed indicator** for locomotives. (1 500  
 words & fig.)

### Railway Signaling. (Chicago.)

1928 656 .253 (.73) & 656 .254 (.73)  
 Railway Signaling, September, p. 319.

SCHWENDT (B. J.). — **Electric plant** on New York  
 Central replaces two mechanical plants. (3 100 words,  
 2 tables & fig.)

1928 656 .256.3 (.73)  
 Railway Signaling, September, p. 324.  
 Automatic interlocking on Great Northern saves \$5,000 a year. (750 words & fig.)

1928 656 .256  
 Railway Signaling, September, p. 325.  
 TEGELER (F. A.). — Track circuit calculator proves effective. (1 000 words & fig.)

1928 621 .85 (.73) & 725 .33 (.73)  
 Railway Signaling, September, p. 327.  
 AMBACH (E. T.). — Baltimore & Ohio operates large signal repair shop. (1 700 words, 6 tables & fig.)

1928 625 .151 (.73)  
 Railway Signaling, September, p. 331.  
 SMITH (B. L.). — South Shore Line uses spring switches on heavy traffic lines. (1 600 words & fig.)

1928 656 .255 (.73)  
 Railway Signaling, September, p. 333.  
 STRADLING (E. G.). — Train order indicators used successfully on the Chicago, Indianapolis & Louisville. (600 words & fig.)

1928 656 .256 (.73)  
 Railway Signaling, September, p. 334.  
 ESTWICK (C. F.). — Track circuit shunting in continuous inductive train control. (3 000 words & fig.)

### South African Railways and Harbours Magazine. (Johannesburg.)

1928 385 .4 (.68)  
 South African Rys. & Harbours Mag., August, p. 1280.  
 Reorganisation of control on the South African Railways. (1 600 words.)

1928 385. (09.1) (.68)  
 South African Rys. & Harbours Mag., August, p. 1297.  
 The Railways of Rhodesia. (2 500 words & fig.)

1928 385. (09.1) (.943)  
 South African Rys. & Harbours Mag., August, p. 1314.  
 The Railways of Queensland. A general survey of the development and operation of the State-owned System. (3 400 words & fig.)

1928 385. (09.1) (.946)  
 South African Rys. & Harbours Mag., August, p. 1332.  
 The Railways of Tasmania. (2 000 words & fig.)

### In Spanish.

#### Ingeniería y Construcción. (Madrid.)

1928 656 .258  
 Ingeniería y Construcción, septiembre, p. 449.  
 LOPEZ ESTELLA (A.). — Enclavamientos eléctricos. (7 400 palabras & fig.)

1928 621 .8  
 Ingeniería y Construcción, septiembre, p. 460.  
 IRURETA (J.). — Modernas grúas para puerto. (3 500 palabras & fig.)

1928 625 .1 (.44 + .460)  
 Ingeniería y Construcción, septiembre, p. 472.  
 FUSTER (J. M.). — El ferrocarril de Canfranc. (4 200 palabras.)

#### Revista de Obras Públicas. (Madrid.)

1928 656 .2  
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 WAIS (F.). — Estaciones pequeñas de ferrocarril. (2 100 palabras & fig.)

1928 62. (0)  
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1928 624 .32 (.494)  
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#### Gaceta de los Caminos de hierro (Madrid.)

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1928 621 .132.3 (.43) & 621 .134.3 (.43)  
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 Locomotora Schmidt-Henschel de alta presión. (1 300 palabras.)

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**L'Ingegnere. (Roma.)**

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Il freno elettropneumatico « Pieper ». (4 200 parole & fig.)

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1928 621 .132.3 (.45)  
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BIANCHI (G.) & LEVI GATTINARA (V.). — Nuove locomotive a grande velocità delle Ferrovie dello Stato. (1 300 parole & fig.)

1928 621 .336  
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MAZZONI (A.) & THESEIDER-DUPRÉ (E.). — Alcune interessanti prove sul nuovo tipo di palo a traliccio ad elementi tubolari. (1 900 parole & fig.)

**Rivista delle comunicazioni ferroviarie. (Roma.)**

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Rivista delle Comunic. ferrov., n° 16, 15 agosto, p. 13.  
Il laboratorio merceologico dell' Istituto Sperimentale delle comunicazioni. (3.000 parole.)

1928 385 (.43 + .45)  
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Per la pace Trieste-Amburgo. (1 000 parole.)

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Come occorra sistemare gli impianti di trazione in seguito all' elettrificazione. (2 200 parole & fig.)

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1928 385. (071.3 (.43)  
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SCHUTH. — Die Ausbildung und Weiterbildung der Lehrlinge und Facharbeiter der Maschinenindustrie. (900 woorden.)

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De Ingenieur, n° 33, 18 Augustus, p. B. 197.  
KIST (N. C.). — Het eigen gewicht van Indische en Nederlandsche bruggen. (600 woorden & 1 tabel.)

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Weerstand van beton tegen chemische aantasting. (1 400 woorden.)

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TOM (A.). — Spoorwegen en spoorwegplannen in Nederlandsch Indië. (14 000 woorden, 9 tabellen & fig.)

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BRINKHORST (W. H.). — De verbetering van de haven te Vlissingen. (9 800 woorden & fig.)

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DE EERENS (M. E.). — Beweginginstallatie van de hefbrug over de Koningshaven te Rotterdam. (6 400 woorden & fig.)

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De Ingenieur, n° 38, 22 September, p. B. 241.

VAN ITERS (F. K. Th.). — Draagvermogen van bouwgrond. Theorie van de fundeering op staal. (7 000 woorden & fig.)

1928 721 .9 (01)  
De Ingenieur, n° 38, 22 September, p. B. 255.

VAN GENDEREN STORT (E. A.). — Eenige opmerkingen over het berekenen en teekenen van ijzeren geraamten voor gebouwen. (3 900 woorden, tafereelen & fig.)

1928 721 .1  
De Ingenieur, n° 38, 22 September, p. B. 265.

Draagvermogen van bouwgrond. Theorie van de fundeering op staal. (13 700 woorden.)

**De Locomotief. (Amsterdam.)**

1928 625 .62 (.43)  
De Locomotief, 12 September, p. 290.

De normalisatie van tramrijtuigen in Duitschland. (3 600 woorden.)

1928 621 .13 & 621 .43  
De Locomotief, 19 September, p. 299.

De concurrentie tusschen motorwagens met verbrandingsmotoren en stoomlocomotieven. (1 700 woorden & 1 tabel.)

**In Polish.**

**INŻYNIER KOLEJOWY. (Warszawa.)**

1928 621 .135. (01 & 625 .251)  
Inżynier Kolejowy, 1 Wrzesnia, str. 267.

HREBNICKI (Z.). — Wpływ hamowania na stateczność 3ch osiowych wazktorowych parowozow z krótka baza. (1 500 słowa & rys.)



1928 625 .13 (.438)  
Inzynier Kolejowy, 1 Wrzesnia, str. 277.  
BALICKI (Z.). — Sanacja przyczolka mostu kolejowego przez Wisle w Tczewie. (2500 slowa & rys.)

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Inzynier Kolejowy, 1 Wrzesnia, str. 280.  
WASILEWSKI (S.). — Niemieckie muzea kolejowe. (6500 slowa & rys.)

**In Portuguese.**

Gazeta dos Caminhos de ferro. (Lisboa.)

1928 625 .162  
Gazeta dos caminhos de ferro, n° 978, 16 set., p. 273.  
SOUZA (J. F. de). — Passagens de nivel. (1400 palavras.)

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\* MELO SAMPAIO (M. de). — As novas carruagens da companhia dos wagons-lits para Portugal. (1200 palavras & fig.)

# MONTHLY BIBLIOGRAPHY OF RAILWAYS <sup>(1)</sup>

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[ 016 .385 (02) ]

## I. — BOOKS.

- |   |                   |   |                  |
|---|-------------------|---|------------------|
|   |                   | 1928  | 669 .1           |
|   | <b>In French.</b> | <b>BREARLEY (Arthur et Harry).</b>  |                  |
|   |                   | Lingots et lingotières. Traduit de l'anglais par A. COUTELERU.  |                  |
|   |                   | Paris et Liège, Béranger, éditeur. In-8° de 224 pages, avec 109 fig. (Prix : 50 francs.)  |                  |
|   |                   | 1928  | 721 .9           |
|   |                   | <b>COSYN (Léon).</b>  |                  |
|   |                   | Exemples de calculs de constructions en béton armé. — Calculs de résistance et dessins cotés d'organes et d'ouvrages. Détermination des dispositions les plus économiques. Recherche de simplifications aux calculs usuels de résistance. Agencement, calcul et coût des coffrages. |                  |
|   |                   | Saint-Ouen, impr. Buttner-Thierry. Paris et Liège, librairie polytechnique Ch. Béranger. In-8°, 454 pages.  |                  |
|   |                   | 1928  | 385. (09.3 (.44) |
|   |                   | <b>GODFERNAUX (R.),</b> ingénieur des arts et manufactures, directeur de la Revue Générale des chemins de fer.  |                  |
|   |                   | Aperçu de l'évolution des chemins de fer français de 1878 à 1928.   |                  |
|   |                   | Paris (VI°), Dunod, éditeur, 92, rue Bonaparte. (16 × 25 cm.), 234 pages, 16 fig. (Prix : 20 francs.)   |                  |
|   |                   | 1928  | 385. (09.1 (.47) |
|   |                   | <b>KANDAOUROFF (P.),</b> ancien directeur au Ministère des Voies et Communications de Russie.   |                  |
|   |                   | Etat actuel des chemins de fer russes.  |                  |
|   |                   | Saïgon. Imprimerie de l'Impartial. In-8° (16 × 24 cm.) de 28 pages.   |                  |
|   |                   | 1928  | 621 .31 (.44)    |
|   |                   | <b>RAUBER (E.) &amp; LABORDE (M.).</b>  |                  |
|   |                   | Coup d'œil sur la production de l'énergie électrique en France.   |                  |
|   |                   | Paris, Revue Industrielle. (Prix : 8 francs.)   |                  |
|   |                   | 1928  | 624 .92 (02)     |
|   |                   | <b>VALLET (M.).</b>   |                  |
|   |                   | Cours de charpentes métalliques.  |                  |
|   |                   | Paris (XVII°), Editions de l'Ecole du Génie Civil, 152, avenue de Wagram, 192 pages, 325 fig. (Prix : 20 fr.)   |                  |
| 1928  | 531. (02)         |   |                  |
| <b>PAPPELL (P.),</b> membre de l'Institut, et <b>DAUTHEVILLE (S.).</b>  |                   |   |                  |
| Précis de mécanique rationnelle. Introduction à l'étude de la physique et de la mécanique appliquée à l'usage des candidats aux certificats de licence et des élèves des écoles techniques supérieures.   |                   |   |                  |
| Paris, Gauthier-Villars & Cie, imprimeurs-éditeurs.   |                   |   |                  |
| In-8°, 738 pages avec fig.  |                   |   |                  |
| 1928  | 656 .23 (02 (.44) |   |                  |
| <b>BARRECCHIA (B.),</b> professeur.   |                   |   |                  |
| Vade-mecum des transports par chemins de fer. — Alsace-Lorraine, Est, Etat, Midi, Nord, Paris-Orléans. Paris-Lyon-Méditerranée et Ceinture de Paris. Tableaux des distances kilométriques par fer, entre toutes les gares (par ordre alphabétique) de transit, de bifurcation des grands réseaux, points de rattachements aux réseaux secondaires, points frontières et maritimes de France, ainsi que leurs directions et les distances particulières à parcourir sur chaque réseau. |                   |   |                  |
| Paris, Société éditrice géographique, 51, rue Lafayette. Gr. in-folio, 17 pages.  |                   |   |                  |
| 1928  | 621 .2 (02)       |   |                  |
| <b>BERGERON (L.),</b> ingénieur A. et M., professeur à l'Ecole Centrale des Arts et Manufactures.   |                   |   |                  |
| Machines hydrauliques.  |                   |   |                  |
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| 1928  | 621 .133.1        |   |                  |
| <b>BLANC (F.),</b> ingénieur des mines.   |                   |   |                  |
| Etude analytique et comparative des charbons au point de vue de leurs impuretés. Courbes caractéristiques. Application au lavage et à la recherche de la valeur commerciale des charbons.   |                   |   |                  |
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(1) The numbers placed over the title of each book are those of the decimal classification proposed by the Railway Congress conjointly with the Office Bibliographique International of Brussels. (See « Bibliographical Decimal Classification as applied to Railway Science », by WEISSENBRUCH in the number for November, 1897, of the *Bulletin of the International Railway Congress*, p. 1509).

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 Paris (XVII<sup>e</sup>). Editions de l'Ecole du Génie Civil, 152  
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**Beton Kalender.** Taschenbuch für Beton- u. Eisenbe-  
 tonbau, sowie d. verwandten Fächer.

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Elektrische Bahnen. 1 Teil : Fahrbewegung und Ener-  
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 lage, Lfg. 4. Schluss. Gr. 8°. ii-75-96 Seiten mit Abb.  
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 wirtschaftlichen Staatswissenschaften und Leiter der  
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Die deutsche Eisenbahn im Spiegel ihrer Zeit. von  
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Die Beamtenräte der Reichsbahn. Kommentar zum  
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The problem of motor transport : an economic ana-  
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**The American architecture of to-day.**

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 Water purification.  
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 594 pages, illust., tables, plates, diagrams. (Price :  
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 A report by the Bureau of Municipal Research of Philadelphia.  
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 Means of accelerating freight trains. Management and men.  
 Webster Groves, Mo. (U. S. A.). Published by Author. Apply.

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 The graphic system of calculating rates and freight charges.  
 Calcutta. Government of India Central Publication Branch. Technical paper n° 265. 9 pages & 5 diagrams.

1928 608  
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 Washington, D. C. Published by Bureau of Railway Economics. Issued as Statistical Summary No. 8. 11 pages.

[ 016 .385. (05 ) ]

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1928 621 .116 & 621 .118  
 Ann. des travaux publics de Belgique, octobre, p. 667.  
**DUBOSCH (Ch.).** — La tôle à chaudière; conditions de réception. (13 000 mots & fig.)

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 Engineering chemistry : A manual of physical testing and quantitative chemical analysis for the use of students, chemists and engineers.  
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**TOULMIN (H. A.), jr.,**  
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 London. W. C. 2. Thornton Butterworth Ltd., 15, Bedford Street. (6 3/4 × 4 1/4 × 3/4 inches), 252 pages. (Price : 2 sh. net.)

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**MARDONES (Francisco).**  
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 Manual del Ingeniero. Traducción de la 20 edición por A. Smith, ingeniero civil, profesor de la Universidad de Caracas, ex-presidente de la Facultad de Ciencias exactas. (11 × 17 cm.), 1 476 páginas, cuadros y fig.

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 Cemento armato. Guida teorico-pratica per l'impiego e l'esecuzione del cemento armato ad uso degli ingegneri geometri e costruttori.  
 Milano. Libreria internazionale Ulrico Hoepli, Galleria De Cristoforis. (14 × 21 cm.), 340 pagine.

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**RENY (P.).** — Frein électropneumatique à action simultanée, automatique, modérable, proportionnelle à la charge, indépendante de l'usure. (5 900 mots & fig.)

1928 625 .114  
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**TOUTLEMONDE (G.).** — Méthode approchée de calcul des profils en travers. (1 700 mots & fig.)

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1928 621 .35, 621 .8 & 656 .1  
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GASQUET (R.). — Les chariots et tracteurs à accumulateurs. (4 000 mots.)

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## Bulletin des transports internationaux par chemins de fer. (Berne.)

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Statistique des chemins de fer de Lettonie pour les années 1924-25 et 1925-26. (250 mots et tableaux.)

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Les résultats de l'exploitation des cinq grandes Compagnies françaises de chemins de fer. (11 800 mots & tableaux.)

1928 385 .113 (.43)  
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La Compagnie des chemins de fer allemands pendant l'exercice 1927. (2 400 mots & tableaux.)

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La trouée des Pyrénées. (2 200 mots & fig.)

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La visite médicale des agents des chemins de fer aux États-Unis. (1 700 mots.)

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Génie Civil, n° 2408, 6 octobre, p. 330.

Le programme d'électrification des chemins de fer allemands. (1 000 mots, 1 tableau & fig.)

1928 656 .254 (.44)  
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1928 62. (01)  
Génie Civil, n° 2409, 13 octobre, p. 354.

MASSOTTE (E.). — Calcul des conduites cylindriques enterrées à vide. (2 100 mots & fig.)

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Génie Civil, n° 2409, 13 octobre, p. 358.

Locomotives articulées, système Garratt, pour le réseau sud-africain, à voie étroite. (1 400 mots & fig.)

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Transmission de l'énergie électrique à haute tension par câbles souterrains. (1 800 mots & fig.)

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Génie Civil, n° 2410, 20 octobre, p. 381.

BATICLE (E.). — L'amélioration des constructions par l'introduction de déformations élastiques systématiques. (1 200 mots & fig.)

## Les Chemins de fer et les Tramways. (Paris.)

1928 385. (01 (.69)  
Les Chemins de fer et les tramways, octobre, p. 215.

CROZET (A.). — Les chemins de fer de Madagascar. (2 300 mots & fig.)

1928 621 .335 (.54)  
Les Chemins de fer et les tramways, octobre, p. 217.

Locomotive électrique de grande vitesse du Great Indian Peninsula Railway. (2 500 mots & fig.)

1928 621 .132.8 (.68)  
Les Chemins de fer et les tramways, octobre, p. 220.

Locomotive à voyageurs type « Garratt » des chemins de fer du Sud-Africain anglais. (900 mots, 1 tableau & fig.)

1928 621 .13 (.73)  
Les Chemins de fer et les tramways, octobre, p. 222.

SPIESS (E.). — Locomotives à vapeur en Amérique. (3 200 mots & fig.)

1928 625 .211  
Les Chemins de fer et les tramways, octobre, p. 227.

Véhicule à caisse métallique. (1 100 mots & fig.)

1928 625 .215  
Chemin de fer et les tramways, octobre, p. 229.  
Balancier monobloc pour bogies. (900 mots & fig.)

1928 656 .253  
Chemin de fer et les tramways, octobre, p. 231.  
Nouveaux appareils automatiques de secours pour utilisation. (1 500 mots & fig.)

1928 625 .143.5  
Chemin de fer et les tramways, octobre, p. 232.  
Dispositif de retenue en place des clous, crampons, et fond. (1 100 mots & fig.)

1928 625 .143.4  
Chemin de fer et les tramways, octobre, p. 235.  
Procédé pour la remise en état d'éclisses pour joints rails usées ou déformées. (900 mots & fig.)

### Le Correspondant des Techniciens et Professionnels des chemins de fer. (Saint-Dizier.)

1928 621 .13 & 621 .335  
Correspondant des Techn. et Profess. des ch. de fer,  
15 octobre, p. 3.  
CAPITAN (H.). — Sur l'utilisation rationnelle de la  
locomotive à vapeur ou électrique. (2 000 mots.)

1928 62. (01 & 691  
Correspondant des Techn. et Profess. des ch. de fer,  
15 octobre, p. 12.  
Influence de la proportion d'eau de gâchage sur la  
résistance des mortiers et des bétons. (1 800 mots &  
)

### La Science et la Vie. (Paris.)

1928 669  
Science et la Vie, octobre, p. 271.  
ROLL (M.). — Où en est notre connaissance des mé-  
tallurgies? (4 900 mots & fig.)

1928 621 .87  
Science et la Vie, octobre, p. 313.  
MAUREL (J.). — La grue la plus puissante du  
monde. (750 mots & fig.)

### Revue générale des chemins de fer. (Paris.)

1928 625 .241 (.44) & 625 .242 (.44)  
Revue générale des chemins de fer, octobre, p. 379.  
VALLANCIEN. — Wagons-tombereaux et wagons  
à bogies de 40 tonnes équilibrés par l'Office central  
des études de matériel de chemins de fer. (6 500 mots &  
)

1928 621 .138.5 (.44)  
Revue générale des chemins de fer, octobre, p. 401.  
RENAUD. — Note sur les ateliers de réparation de  
locomotives des chemins de fer de l'Etat à Sotteville  
(Lez-Mare). (3 300 mots & fig.)

1928 625 .143.1  
Revue générale des chemins de fer, octobre, p. 413.  
Voie normale en rails à large ornière supprimant les  
contre-rails pour les ports, quais, traversées de route,  
courbes de faible rayon. (2 200 mots & fig.)

1928 385 .113 (.44)  
Revue générale des chemins de fer, octobre, p. 418.  
Les résultats d'exploitation du réseau des chemins  
de fer de l'Etat en 1927. (4 400 mots & 3 tableaux.)

1928 385 .113 (.52)  
Revue générale des chemins de fer, octobre, p. 429.  
Les chemins de fer du Japon. (2 100 mots & tableaux.)

1928 385 .(01 (.675)  
Revue générale des chemins de fer, octobre, p. 435.  
Le développement des voies ferrées au Congo belge.  
(4 000 mots.)

1928 656 .253 & 656 .259  
Revue générale des chemins de fer, octobre, p. 440.  
La répétition des signaux sur les locomotives. (3 300  
mots & fig.)

1928 621 .13 (.494) & 621 .335 (.494)  
Revue générale des chemins de fer, octobre, p. 450.  
Comparaison entre la traction à vapeur et la traction  
électrique basée sur des résultats d'exploitation. (350  
mots et 1 tableau.)

1928 625 .212 (.43)  
Revue générale des chemins de fer, octobre, p. 452.  
Nouveaux dispositifs adoptés sur les wagons des che-  
mins de fer du Reich. (450 mots & fig.)

### Revue politique et parlementaire. (Paris.)

1928 385 .1 (.44)  
Revue politique et parlementaire, 10 octobre, p. 5.  
PESCHAUD (M.). — L'épargne et les chemins de fer.  
(16 000 mots.)

### Revue universelle des mines, de la métallurgie, des travaux publics, des sciences et des arts appliqués à l'industrie. (Liège.)

1928 669 .1 (.73)  
Revue universelle des mines, n° 1, 1<sup>er</sup> octobre, p. 5.  
LEPERSONNE (F.). — La fabrication de l'acier Mar-  
tin basique aux Etats-Unis. (5 200 mots, 1 tableau &  
fig.)

1928 621 .8  
Revue universelle des mines, n° 2, 15 octobre, p. 83.  
SCHLAG (A.). — Les réducteurs à trains planétaires  
flottants dans les appareils de levage. (2 300 mots &  
fig.)



**In German.**

**Archiv für Eisenbahnwesen. (Berlin.)**

1928 625 .1 (.51)  
Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt., S. 1097.  
DORPMÜLLER (J.). — Vom Eisenbahnbau in China.  
(7 900 Wörter & Abb.)

1928 385. (09) (.725)  
Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt., S. 1181.  
Die mexikanischen Eisenbahnen. (6 900 Wörter & Tabellen.)

1928 385 .517 (.43)  
Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt., S. 1203.  
KUHATSCHHECK (O.). — Die Kranken- und Arbeitspensionskassen, die Angestellten-, Unfall- und Arbeitslosenversicherung bei der Deutschen Reichsbahn im Jahr 1927. (20 000 Wörter & Tabellen.)

1928 656 .222.1 (.44)  
Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt., S. 1265.  
JEZEWSKI (S. v.). — Die Fahrgeschwindigkeit der Schnellzüge in Frankreich 1914-1927. (1 600 Wörter & 3 Tabellen.)

1928 385 .113 (.494)  
Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt., S. 1272.  
Die Schweizerische Bundesbahnen im Jahr 1927. (350 Wörter & Tabellen.)

1928 385 .113 (.47)  
Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt., S. 1279.  
Die russischen Eisenbahnen im Wirtschaftsjahr 1925-1926. (3 000 Wörter & Tabellen.)

1928 385 .1 (.44)  
Archiv für Eisenbahnwesen, Heft 5, Sept.-Okt., S. 1298.  
Über die Finanzlage der französischen Eisenbahnen. (1 200 Wörter & Tabellen.)

**Glaser's Annalen. (Berlin.)**

1928 621 .132.8 (.68)  
Glaser's Annalen, Heft 6, 15. September, S. 73.  
Kruppsche Garrattlokomotiven für die Südafrikanischen Bahnen. (650 Wörter & Abb.)

1928 625 .216 & 656 .28 (01)  
Glaser's Annalen, Heft 6, 15. September, S. 81.  
PAAP. — Mittelpuffer-Steifkupplungen und Eisenbahnkatastrophen. (1 500 Wörter & Abb.)

**In English.**

**Bengal-Nagpur Railway Magazine. (Calcutta.)**

1928 625 .26 (.54)  
Bengal-Nagpur Railway Magazine, September, p. 51.  
Some notes about the Nagpur workshops. (400 words & fig.)

**Bulletin American Railway Engineering Association. (Chicago.)**

1928 624. (0) (.7)  
Bull. Amer. Ry. Eng. Ass<sup>n</sup>, July, p. 3.  
Specifications for steel highway bridges. (19 000 words & fig.)

1928 624 .63 (.7)  
Bull. Amer. Ry. Eng. Ass<sup>n</sup>, July, p. 67.  
HUNLEY (J. B.). — Report of tests which were made on the Swift Island bridge over the Yadkin River in North Carolina. (1 100 words.)

1928 625 .22 (.7)  
Bull. Amer. Ry. Eng. Ass<sup>n</sup>, July, p. 69.  
WHILLDIN (A.). — Combing the railroad. (40 words & fig.)

1928 385 .52 (.7)  
Bull. Amer. Ry. Eng. Ass<sup>n</sup>, July, p. 85.  
GILLETTE (H. P.). — Why real wages have increased 35 per cent in 14 years. (1 500 words.)

1928 656 .284 (.7)  
Bull. Amer. Ry. Eng. Ass<sup>n</sup>, August, p. 3.  
New England flood of November, 1927. (30 000 words & fig.)

**Electric Railway Journal. (New-York.)**

1928 385. (064) (.7)  
Electric Railway Journal, No. 12, September 22, p. 48.  
Exhibit again is big feature of the Cleveland Convention. (1 500 words & fig.)

1928 621 .335 (.73) & 621 .333 (.7)  
Electric Railway Journal, No. 12, September 22, p. 49.  
1928 car show includes several unusual models. (47 words & fig.)

1928 625 .215 (.7)  
Electric Railway Journal, No. 12, September 22, p. 5.  
Car trucks displayed show progress during year. (3 500 words & fig.)

1928 656 .224 (.7)  
Electric Railway Journal, No. 12, September 22, p. 5.  
Interesting developments in methods and devices for fare collection. (3 500 words & fig.)

1928 621 .333 (.7)  
Electric Railway Journal, No. 12, September 22, p. 5.  
New ideas brought out in motors and control. (20 words & fig.)

1928 621 .33 (06) (08) (.7)  
Electric Railway Journal, No. 13, September 29, p. 5.  
Proceedings 47th convention of the American Electric Railway Association. (18 000 words & fig.)

- 1928 621 .33 (.73)  
Electric Railway Journal, No. 14, October 6, p. 624.  
Success won by courage and hard work. (4 000 words & fig.)
- 1928 656 .257 (06 (.73)  
Electric Railway Journal, No. 14, October 6, p. 634.  
Accountants discuss need for coping with new problems. (2 000 words & fig.)
- 1928 614 .8 (.73) & 656 .24 (06 (.73)  
Electric Railway Journal, No. 14, October 6, p. 636.  
Methods for reducing accidents command attention of trains men. (3 000 words & fig.)
- 1928 656 .24 (.73)  
Electric Railway Journal, No. 14, October 6, p. 638.  
CARSTARPHEN (F. E.). — Ambulance chasing in New York exposed. (1 700 words & fig.)
- 1928 625 .24 (06 (.73)  
Electric Railway Journal, No. 14, October 6, p. 640.  
FAIRTY (I. S.). — Claims department operation in Toronto. (2 000 words & fig.)
- 1928 621 .139, 625 .18 & 625 .27  
Electric Railway Journal, No. 14, October 6, p. 643.  
DUNCAN (A. S.). — Inactive stocks. (1 400 words & fig.)
- 1928 625 .14 (.43).  
Electric Railway Journal, No. 14, October 6, p. 645.  
Hamburg uses reinforced concrete track. (300 words & fig.)
- 1928 656 .211.5 (.42)  
Electric Railway Journal, No. 14, October 6, p. 645.  
World's largest escalator system. (500 words.)

### Engineer. (London.)

- 1928 621 .165 (.42)  
Engineer, No. 3795, October 5, p. 365.  
The Metropolitan-Vickers self-contained turbo-generator. (4 200 words & fig.)
- 1928 621 .116  
Engineer, No. 3795, October 5, p. 373.  
Fuel research. Coal sampling. (3 400 words & fig.)
- 1928 621 .139 (.42)  
Engineer, No. 3795, October 5, p. 386.  
A new electric welding dynamo. (1 600 words & fig.)
- 1928 625 .4  
Engineer, No. 3796, October 12, p. 414.  
The noise problem on the tubes. (1 300 words.)
- 1928 621 .132.8 (.62)  
Engineer, No. 3796, October 12, p. 414.  
Articulated steam rail coach for Egypt. (700 words & fig.)

### Engineering. (London.)

- 1928 621 .31 (.42)  
Engineering, No. 3273, October, 5, p. 418.  
10,000 kw. turbo-generator and condenser at Stonebridge Park power station. (3 200 words, 2 tables & fig.)
- 1928 669 .1 (06 (.42)  
Engineering, No. 3273, October 5, p. 432.  
Annual meeting, Iron and Steel Institute, held at Bilbao (Spain), September 25, 1928. (4 400 words.)
- 1928 669 .1  
Engineering, No. 3273, October 5, p. 439.  
PFEIL (L. B.). — The change in tensile strength due to ageing of cold-drawn iron and steel. (3 000 words, tables & fig.)
- 1928 621 .4  
Engineering, No. 3273, October 5, p. 441.  
CHORLTON (A. E. L.). — Oil engines for aircraft and railways. (1 300 words & fig.)
- 1928 656. (0  
Engineering, No. 3274, October 12, p. 462.  
Co-operation in transport. (1 200 words.)
- 1928 656 .211.7 (.71)  
Engineering, No. 3274, October 12, p. 469.  
The Canadian Pacific liner « Duchess of York ». (600 words & fig.)

- 1928 669 .1  
Engineering, No. 3274, October 12, p. 472.  
WHITELEY (J. H.). — Effects observed in quenched liquid-steel pellets and their bearing on bath conditions. (3 100 words & fig.)

### Engineering News-Record. (New-York.)

- 1928 691  
Engineering News-Record, No. 12, September 20, p. 435.  
Preservative coating test results. (100 words & table).
- 1928 624 .5  
Engineering News-Record, No. 13, September 27, p. 459.  
A suspension bridge era. (800 words.)
- 1928 624 .51 (.71 + .73)  
Engineering News-Record, No. 13, September 27, p. 460.  
JONES (J.). — Design of great international suspension bridge over Detroit River. (5 000 words & fig.)
- 1928 691  
Engineering News-Record, No. 13, September 27, p. 472.  
McNAUGHTON (W. C.). — Relation between output and cost in mixing concrete. (700 words & fig.)
- 1928 625 .13 (.73)  
Engineering News-Record, No. 13, September 27, p. 473.  
DOLL (Th.) & SINGLETON (J.). — Revamping steel viaduct to carry street over railroad. (1 400 words & fig.)

1928 693  
Engineering News-Record, No. 14, October 4, p. 503.  
SWANDER (O. J.). — Methods of reducing fire hazards during construction. (1 900 words & fig.)

1928 693  
Engineering News-Record, No. 14, October 4, p. 507.  
LEVENS (A. S.). — Shrinkage effect of Celite in mortar and concrete. (700 words & fig.)

1928 62. (01  
Engineering News-Record, No. 14, October 4, p. 526.  
New 2 000 000-lb. machine tests Hudson River bridge cables. (500 words & fig.)

1928 62. (01 & 624 .2  
Engineering News-Record, No. 15, October 11, p. 541  
CAMPBELL (W. B.). — Tests yield formulas for steel I-sections in torsions. (1 300 words, 1 table & fig.)

1928 624 .8 (.73)  
Engineering News-Record, No. 15, October 11, p. 546.  
Chicago bascule bridge erected over railroad tracks. (3 200 words & fig.)

1928 625 .13 (.73)  
Engineering News-Record, No. 15, October 11, p. 555.  
Progress on the Cascade tunnel. Great Northern Railway. (350 words & fig.)

#### Great Western Railway Magazine. (London.)

1928 614 .8 (.42)  
Great Western Railway Magazine, October, p. 387.  
Accident prevention for permanent-way men and for others. (1 500 words & fig.)

#### Journal, Permanent Way Institution. (London.)

1928 625 .1 (0 & 625 .13 (0  
Journal, Perm. Way Inst., August, p. 114.  
Points of common concern to engineering and locomotive departments. (4 700 words.)

1928 625 .17 (.42)  
Journal, Perm. Way Inst., August, p. 124.  
BRADLEY (E. S.). — Complete renewal of plain line lumping method. (2 100 words.)

1928 625 .17 (.42)  
Journal, Perm. Way Inst., August, p. 130.  
APPLEYARD (T.). — Renewal of plain line piecemeal method. (2 400 words.)

1928 625 .143.3 (.42)  
Journal, Perm. Way Inst., August, p. 138.  
LANGLEY (A. E.). — Lead strip apparatus for obtaining section of rail. (1 300 words & fig.)

1928 625 .13 (.  
Journal, Perm. Way Inst., August, p. 141.  
KENT (G. F.). — Blowing up a bridge. (1 600 words & fig.)

#### Locomotive Railway Carriage & Wagon Review. (London.)

1928 621 .132.8 (.4  
Loc. Ry. Carriage & Wagon Review, October 15, p. 3.  
Steam rail coaches, Egyptian State Railways. (1 900 words & fig.)

1928 625 .232. (0  
Loc. Ry. Carriage & Wagon Review, October 15, p. 3.  
Sleeping cars. (2 000 words & fig.)

1928 621 .132.8 (.42) & 621 .4 (.4  
Loc. Ry. Carriage & Wagon Review, October 15, p. 3.  
Drewry rail cars, Great Southern Railways of Ireland. (550 words & fig.)

1928 621 .132.7 (.4  
Loc. Ry. Carriage & Wagon Review, October 15, p. 3.  
A novel shunting tractor. (1 900 words & fig.)

#### Mechanical Engineering. (New-York.)

1928 621 .1  
Mechanical Engineering, October, p. 767.  
TENNEY (E. H.). — Progress in central-station use of pulverized coal. (4 000 words, 1 table & fig.)

1928 669  
Mechanical Engineering, October, p. 807.  
Carbon vs. alloy steels. (850 words.)

#### Modern Transport. (London.)

1928 656 .2 (.4  
Modern Transport, No. 499, October 6, p. 2.  
Railway companies' road problems. (1 000 words.)

1928 656 .225 (.7  
Modern Transport, No. 499, October 6, p. 4.  
Handling perishable traffic in New York. (1 800 words & fig.)

1928 625 .13 (.4  
Modern Transport, No. 499, October 6, p. 7.  
Reconstruction of Saltash bridge, Great Western Railway. (1 300 words & fig.)

1928 625 .245 (.9  
Modern Transport, No. 499, October 6, p. 9.  
New rolling stock for Malaya. (1 000 words & fig.)



1928 656 .2 & 629 .13  
Modern Transport, No. 500, October 13, p. 3.  
SEFTON BRANCKER (Sir W.). — Airways and  
railways. (3 800 words & fig.)

1928 621 .133.7 (.42) & 725 .33 (.42)  
Modern Transport, No. 500, October 13, p. 9.  
Water softening for locomotive boilers, (1 300 words  
& fig.)

1928 385. (091 (.43)  
Modern Transport, No. 500, October 13, p. 12.  
Present position of the German railways. (1 700  
words.)

### Proceedings, Institution of Mechanical Engineers. (London.)

1928 621 .116  
Proceed., Instit. of Mechanical Engineers, No. 2, p. 169.  
GREGSON (W.). — Waste heat recovery. (17 500  
words, 9 tables & fig.)

1928 621 .138.5 (.42) & 725 .33 (.42)  
Proceed., Instit. of Mechanical Engineers, No. 2, p. 245.  
BEAMES (H. P. M.). — The reorganization of Cre-  
we locomotive works. (14 500 words & fig.)

1928 669 .1  
Proceed., Instit. of Mechanical Engineers, No. 2, p. 293.  
GOUGH (H. J.) & MURPHY (A. J.). — The causes  
of failure of wrought-iron chain and cable. (15 000  
words, 6 tables & fig.)

1928 62. (01  
Proceed., Instit. of Mechanical Engineers, No. 2, p. 417.  
BAILEY (R. W.). — The mechanical testing of ma-  
terials. (5 000 words, 2 tables & fig.)

1928 621 .13 (0  
Proceed., Instit. of Mechanical Engineers, No. 2, p. 465.  
MAUNSELL (R. E. L.). — The trend of modern  
steam-locomotive design. (5 000 words.)

1928 621 .2 (.42) & 656 .212.6 (.42)  
Proceed., Instit. of Mechanical Engineers, No. 2, p. 485.  
BILLINGHAM (C. J. T.). — Hydraulic power. (2 700  
words & fig.)

### Railway Age. (New-York.)

1928 656 .212.9 (.73)  
Railway Age, No. 12, Section one, September 22, p. 528.  
Friendly rivalry results in improved freight hand-  
ling. (1 500 words, tables & fig.)

1928 625 .142.2  
Railway Age, No. 12, Section one, September 22, p. 531.  
SCHRENK (von H.). — Mechanical injury to cross-  
ties ascribed to wear. (2 900 words & fig.)

1928 385 .517.1 (.73)  
Railway Age, No. 12, Section one, September 22, p. 537.  
WHITING (F. V.). — Insolvency of pension plans  
and remedies. (3 200 words.)

1928 656 .2 & 629 .13  
Railway Age, No. 12, Section one, September 22, p. 541.  
KELSEY (C. W.). — Railroad-owned air line propo-  
sed. (5 400 words.)

1928 656 .25 (06 (.73)  
Railway Age, No. 12, Section one, September 22, p. 545.  
Signal section concludes busy convention. (2 600  
words.)

1928 347 .763 (.42)  
Railway Age, No. 12, Section one, September 22, p. 549.  
ARTHURTON (A. W.). — British railways author-  
ized to operate on highways. (4 500 words.)

1928 385 .1 (.73)  
Railway Age, No. 12, Section one, September 22, p. 553.  
DUNN (S. O.). — Where are the railways heading?  
(1 400 words.)

1928 656 .28 (01 (.73)  
Railway Age, No. 12, Section one, September 22, p. 554.  
Accident investigations, first quater, 1928. (1 500  
words.)

1928 625 .2 (06 (.73)  
Railway Age, No. 12, Section one, September 22, p. 555.  
Car Department Supervisors' Associations unite  
(4 800 words.)

1928 625 .245 (.73)  
Railway Age, No. 12, Section one, September 22, p. 559  
To study truck action. (1 900 words & fig.)

1928 625 .162 (.73) & 656 .259 (.73)  
Railway Age, No. 12, Section one, September 22, p. 561.  
RUDD (E. J.). — Accidents and protective devices at  
grade crossings. (2 500 words.)

1928 656 .2 (.73) & 656 .261 (.73)  
Railway Age, No. 12, Section two, September 22, p. 580.  
L. C. L. traffic recovered by motor truck operation.  
(4 800 words & fig.)

1928 656 .2 (.73)  
Railway Age, No. 12, Section two, September 22, p. 587.  
The Pickwick motor coach sleeper. (900 words &  
fig.)

1928 656 .2 (.73)  
Railway Age, No. 12, Section two, September 22, p. 589.  
Handling mail, baggage and express by motor coach.  
(1 600 words & fig.)

1928 659 (.73)  
Railway Age, No. 12, Section two, September 22, p. 592.  
KEENAN (E. A.). — Merchandising motor coach ri-  
des. (2 200 words.)

- 1928 385 .14 (.73)  
Railway Age, No. 13, September 29, p. 601.  
Political rate-making. (1 600 words.)
- 1928 655 (.73)  
Railway Age, No. 13, September 29, p. 602.  
Profit in multigraphing. (350 words.)
- 1928 621 .131.3 (.73) & 621 .134.1 (.73)  
Railway Age, No. 13, September 29, p. 603.  
Auxiliary locomotive tested on the plant at Altoona  
(2 000 words & fig.)
- 1928 621 .139 (.73), 625 .18 (.73) & 625 .27 (.73)  
Railway Age, No. 13, September 29, p. 607.  
Railway shop foreman diagnose material problems.  
(3 500 words & fig.)
- 1928 656 .254 (.06 (.73)  
Railway Age, No. 13, September 29, p. 613.  
Telegraph and telephone section of American Rail-  
way Association meets in San Francisco. (5 400 words.)
- 1928 621 .336 (.73) & 625 .143.5 (.73)  
Railway Age, No. 13, September 29, p. 617.  
American Electric Railway Association receives hea-  
vy electric traction report. (650 words ? 2 tables.)
- 1928 625 .1 (.06 (.73)  
Railway Age, No. 13, September 29, p. 619.  
Roadmasters view problems as cogs in transportation  
machine. (7 200 words.)
- 1928 625 .14 (.73)  
Railway Age, No. 13, September 29, p. 623.  
DEIMLING (J. F.). — Essentials of a high-speed  
track. (1 100 words.)
- 1928 625 .143  
Railway Age, No. 13, September 29, p. 624.  
BRONSON (C. B.). — Manufacture and service of  
rail. (1 100 words.)
- 1928 385 .21 (.73)  
Railway Age, No. 13, September 29, p. 625.  
Samuel O. Dunn discusses the railroads' competitors.  
(950 words.)
- 1928 656 .24 (.73)  
Railway Age, No. 13, September 29, p. 626.  
Frisco reduces rough handling and claims. (2 200  
words, 2 tables & fig.)
- 1928 621 .13 (.06 (.73)  
Railway Age, No. 13, September 29, p. 628.  
Traveling Engineers meet at Chicago. (2 000 words.)
- 1928 621 .33  
Railway Age, No. 14, October 6, p. 646.  
What kind of power for electric traction? (800 words.)

- 1928 385 .5 (.73)  
Railway Age, No. 14, October 6, p. 647.  
Railway employment and wages. (1 100 words & fig.)
- 1928 656 .222 (.73)  
Railway Age, No. 14, October 6, p. 650.  
Missouri Pacific finds extended engine runs profit-  
ble. (1 200 words, tables & fig.)
- 1928 625 .1 (.73)  
Railway Age, No. 14, October 6, p. 653.  
BLAESS (A. F.). — Building of Edgewood cut-o  
involves heavy work. (4 300 words & fig.)
- 1928 656 .224. (.06 (.73)  
Railway Age, No. 14, October 6, p. 659.  
Passenger officers discuss competition. (7 400 words)
- 1928 656 .254 (.73)  
Railway Age, No. 14, October 6, p. 665.  
Pere Marquette installs centralized control signal sy-  
tem. (2 900 words & fig.)
- 1928 621 .13 (.06 (.73)  
Railway Age, No. 14, October 6, p. 669.  
Traveling Engineers elect officers. (4 400 words.)

#### Railway Gazette. (London.)

- 1928 656 .25 (.42) & 655 .283 (.42)  
Railway Gazette, No. 14, October 5, p. 412.  
The London Bridge collision. (1 000 words.)
- 1928 621 .133.  
Railway Gazette, No. 14, October 5, p. 418.  
Railway subjects discussed at the World Power Fuel  
Conference, London (South Kensington), 1928. (1500  
words & 2 tables.)
- 1928 656 .211 (.42) & 656 .213.5 (.42)  
Railway Age, No. 14, October 5, p. 420.  
Docks ownership and finance. (900 words & 3 tables.)
- 1928 385. (09.1 (.73)  
Railway Gazette, No. 14, October 5, p. 423.  
Ten miles from a railway. (200 words & fig.)
- 1928 656 .224 (.73)  
Railway Gazette, No. 14, October 5, p. 423.  
Commutation tickets in the United States. (80 words  
& fig.)
- 1928 625 .236 (.42)  
Railway Gazette, No. 14, October 5, p. 425.  
Carriage washing plant at York, London and North  
Eastern Ry. (650 words & fig.)
- 1928 625 .143  
Railway Gazette, No. 15, October 12, p. 444.  
Comparative rail costs. (400 words.)

1928 625 .23 (0 (.42)  
 Railway Gazette, No. 15, October 12, p. 449.  
 Recent developments in railway carriage stock. (3 000 words.)

1928 656. (0  
 Railway Gazette, No. 15, October 12, p. 451.  
 Co-operation in transport. (1 100 words.)

1928 385 .517.7 (.42)  
 Railway Gazette, No. 15, October 12, p. 454.  
 Enginemen's hostel at Chalk Farm, London Midland & Scottish Ry. (1 600 words & fig.)

1928 625 .176 (.83)  
 Railway Gazette, No. 15, October 12, p. 460.  
 Gauge conversion, Antofagasta (Chili) & Bolivia Ry (1 500 words & fig.)

### Railway Engineer. (London.)

1928 656 .28 (01 (.42)  
 Railway Engineer, October, p. 351.  
 Sir John Pringle's Annual report. (1 100 words.)

1928 621 .9 (.42)  
 Railway Engineer, October, p. 353.  
 Machine tool and engineering exhibition at Olympia. (5 000 words & fig.)

1928 621 .135 .2  
 Railway Engineer, October, p. 367.  
 BUCKLE (H. B.). — The heating of locomotive axle bearings. (4 200 words & fig.)

1928 621 .132.3 (.42)  
 Railway Engineer, October, p. 372.  
 New 4-4-0 type locomotives. (250 words & fig.)

1928 621 .133.7 (.42)  
 Railway Engineer, October, p. 373.  
 An improved exhaust steam injector for locomotives. (2 800 words & fig.)

1928 621 .132.8 (.43) & 621 .43 (.43)  
 Railway Engineer, October, p. 377.  
 A new German Diesel locomotive. (1 600 words & fig.)

1928 656 .253 (.42)  
 Railway Engineer, October, p. 380.  
 Re-signalling of Breydon viaduct, Midland & Great Northern Joint Railway. (1 000 words & fig.)

1928 621 .39 (.42) & 656 .212.6 (.42)  
 Railway Engineer, October, p. 382.  
 New level luffing electric jib crane. (350 words & fig.)

1928 625 .154 (.945)  
 Railway Engineer, October, p. 383.  
 85-ft locomotive turntable, Victorian Railways. (300 words & fig.)

1928 621 .132.6 (.43)  
 Railway Engineer, October, p. 384.  
 A recent German tank locomotive. (500 words & fig.)

### Railway Engineering & Maintenance. (Chicago.)

1928 694  
 Railway Engineering and Maintenance, October, p. 413.  
 Better practices in constructing frame buildings. (3 000 words & fig.)

1928 625 .13 (.73)  
 Railway Engineering and Maintenance, October, p. 416.  
 LANG (P. G.), jr. — Simple expedient solves problem in bridge erection. (1 400 words & fig.)

1928 625 .142.2 (.73) & 691 (.73)  
 Railway Engineering and Maintenance, October, p. 419.  
 More roads using creosote mixture. (800 words & fig.)

1928 625 .1 (06 (08 (.73)  
 Railway Engineering and Maintenance, October, p. 425.  
 Roadmasters hold Convention at Detroit, Mich., September 18, 19 and 20, 1928. (28 000 words & fig.)

### Railway Magazine. (London.)

1928 656 .222.1 (.42)  
 Railway Magazine, October, p. 267.  
 ALLEN (C. J.). — British locomotive practice and performance. (5 600 words, 5 tables & fig.)

### Railway Signaling. (Chicago.)

1928 656 .254 (.73)  
 Railway Signaling, October, p. 357.  
 Pere Marquette installs centralized control signal system. (3 200 words & fig.)

1928 656 .254 (.73)  
 Railway Signaling, October, p. 361.  
 RATCLIFF (T. R.). — Gates replaced by flashing signals. (1 000 words & fig.)

1928 656 .256.3 (.73)  
 Railway Signaling, October, p. 363.  
 Nashville, Chattanooga & St. Louis completes signaling from Nashville to Atlanta, 288 miles. (2 800 words & fig.)

1928 656 .25 (06 (.73)  
 Railway Signaling, October, p. 367.  
 Signal Section, American Railway Association, convenes at Atlantic City. (14 000 words, tables & fig.)

1928 656 .25 (06 (.73)  
 Railway Signaling, October, p. 384.  
 Signalmen's Brotherhood holds biennial convention in Chicago. (2 100 words.)



# South African Railways and Harbours Magazine. (Johannesburg.)

1928 656 .2 (.68)  
South African Rys. & Harbours Mag., Septemb., p. 1464.  
Official opening of the Swaziland services. (2 600 words & fig.)

1928 621 .33 (.68)  
South African Rys. & Harbours Mag., Septemb., p. 1470.  
Railway electrification in Natal. (1 700 words.)

1928 385. (09.1 (.945)  
South African Rys. & Harbours Mag., Septemb., p. 1474.  
The Victorian Government Railways. (6 500 words & fig.)

## University of Illinois Bulletin. (Urbana.)

1928 621 .133.1  
University of Illinois Bulletin, No. 48, July 31, p. 1.  
PARR (S. W.). — The classification of coal. (5 900 words, 26 tables & fig.)

1928 62. (01 & 721 .6  
University of Illinois Bulletin, No. 1, September 4, p. 1.  
WESTMAN (A. E. R.). — The thermal expansion of fireclay bricks. (5 800 words & fig.)

1928 62. (01 & 621 .116  
University of Illinois Bulletin, No. 5, October 2, p. 1.  
HURSH (R. K.) & GRIGSBY (C. E.). — A laboratory furnace for testing resistance of firebrick to slag erosion. (3 100 words, 2 tables & fig.)

## In Spanish.

### Gaceta de los Caminos de hierro (Madrid.)

1928 656 .211 (.44)  
Gaceta de los Caminos de hierro, n° 3562, 1° de octubre, p. 325.  
Ensanche de la estación del Este, en Paris. (1 100 palabras.)

### Ingenieria y Construcción. (Madrid.)

1928 691  
Ingenieria y Construcción, octubre, p. 524.  
RENGADE (M.) & de la REGUERA (G. E.). — Los supercementos y el cemento aluminoso. (2 900 palabras.)

### Revista de Obras Públicas. (Madrid.)

1928 624 .32 (.460)  
Revista de Obras Publicas, n° 19, 1° de octubre, p. 345.  
MARTINEZ CATENA (P.). — Corrimiento lateral de un tramo metálico sobre la Riera de Breda. (1 200 palabras & fig.)

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Revista de Obras Publicas, n° 19, 1° de octubre, p. 347.  
ESPINO (F.). — La clasificación de documentos técnicos según el sistema decimal. (2 100 palabras.)

## In Italian.

### Annali dei lavori pubblici. (Roma.)

1928 624 .63 (.45)  
Annali dei lavori pubblici, luglio, p. 673.  
Due nuove grandiose opere d'arte in Lombardia. (1 000 parole & fig.)

### Rivista delle comunicazioni ferroviarie. (Roma.)

1928 385. (09.1 (.45)  
Riv. delle Comunic. ferrov., n° 20, 15 ottobre, p. 11.  
Il perfezionamento delle nostre Ferrovie di Stato. (3 300 parole.)

1928 313 : 656 .232 (.45)  
Riv. delle Comunic. ferrov., n° 20, 15 ottobre, p. 16.  
MALCHIODI (A.). — Il traffico internazionale di viaggiatori. (850 parole & tavole.)

### Rivista tecnica delle ferrovie italiane. (Roma.)

1928 625 .13 (.45)  
Rivista tecnica delle ferrov. ital., 15 settembre, p. 89.  
BUSINARI (F.). — Memoria sulla ricostruzione del ponte ferroviario sull' Isonzo detto di Salcano, ad arco in pietra di m. 85 di luce, per la ferrovia Gorizia-Piedicolle. (4 800 parole & fig.)

1928 62. (01 & 669 .  
Rivista tecnica delle ferrov. ital., 15 settembre, p. 110.  
STEOCANELLA (A.). — La prova di resilienza nello studio dell' ing. Fettweiss. (3 000 parole & fig.)

## In Dutch.

### De Ingenieur. (Den Haag.)

1928 621 .134.  
De Ingenieur, n° 40, 6 October, p. W. 213.  
VAN SCHOUWENBURG (W. H.). — Een ongevoon geval van kruiskopbreuk. (850 woorden & fig.)

1928 624 .32 (.492)  
De Ingenieur, n° 41, 13 October, p. B. 277.  
BOERSMA (P.). — Het transport van de brug over de Eendracht bij Tholen. (3 500 woorden & fig.)

1928 691  
De Ingenieur, n° 41, 13 October, p. B. 283.  
De bestendigheid van tracement beton in agressief water. (600 woorden.)

**De Locomotief. (Amsterdam.)**

1928 669 .1  
De Locomotief, n° 41, 10 October, p. 321.  
Thermische behandeling van spoorstaven. (3 200 woorden.)

**In Polish.**

**INŻYNIER KOLEJOWY. (Warszawa.)**

1928 656 .223.2 (.438)  
Inżynier Kolejowy, 1 Pazdnierka, str. 296.  
TARWID (S.). — Wprowadzenie racjonalnej organizacji pracy przetokowej na stacjach rozrządowych i przejściowich Dyrekcji Kolei Państwowych w Radomiu. (6 900 słowa, tablice & fig.)

1928 385 .1 (.438)  
Inżynier Kolejowy, 1 Pazdnierka, str. 316.  
ANDRZEJOWSKI (St.). — Koszty własne a polityka finansowa P. K. P. (2 400 słowa.)

**In Portuguese.**

**Gazeta dos Caminhos de ferro. (Lisboa.)**

1928 385 (.469) & 627 (.469)  
Gaz. dos caminhos de ferro, n° 979, 1 de outubro, p. 289.  
FERNANDO DE SOUZA (J.). — Portos de mar e caminhos de ferro. (2 700 palavras.)

**Revista das Estradas de ferro. (Rio de Janeiro )**

1928 621 .132.8 & 621 .43  
Revista das Estradas de ferro, n° 77, 30 de setembro, p. 561.  
LINS (A.). — Locomotivas Diesel. (2 300 palavras.)





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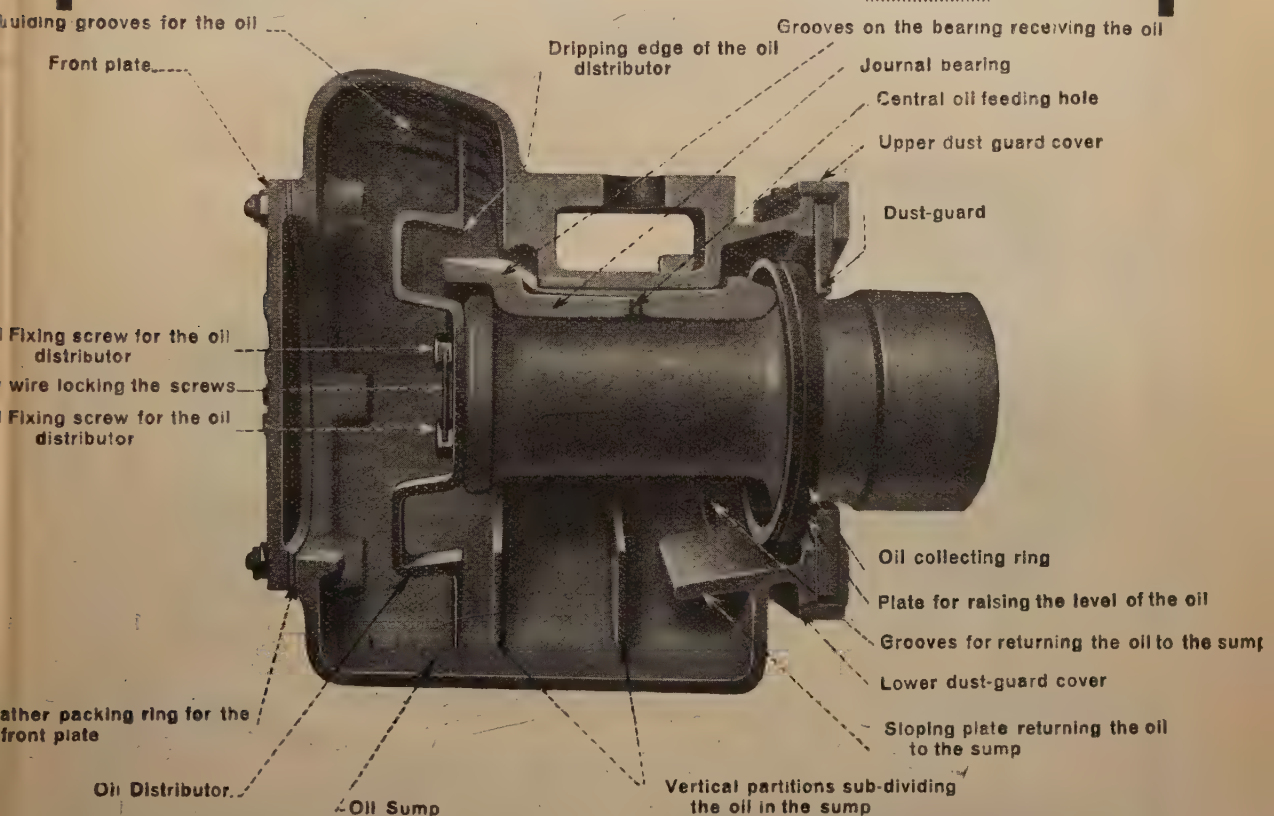
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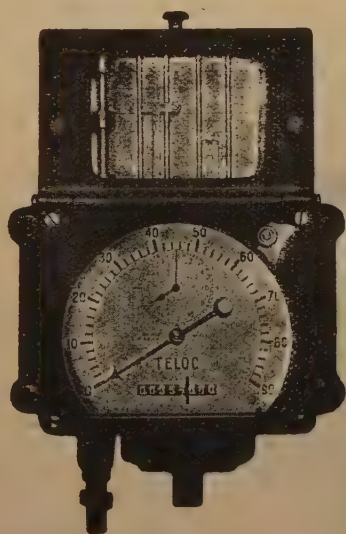
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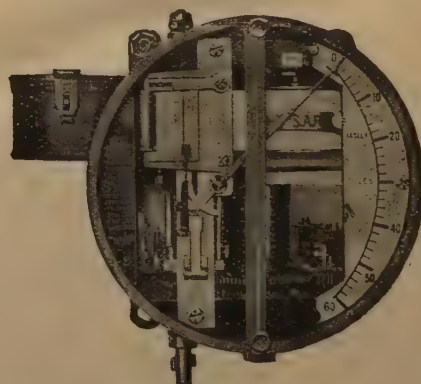
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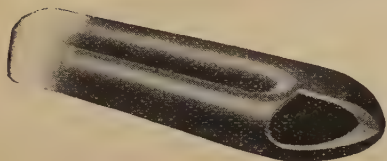


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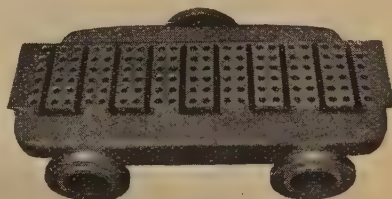
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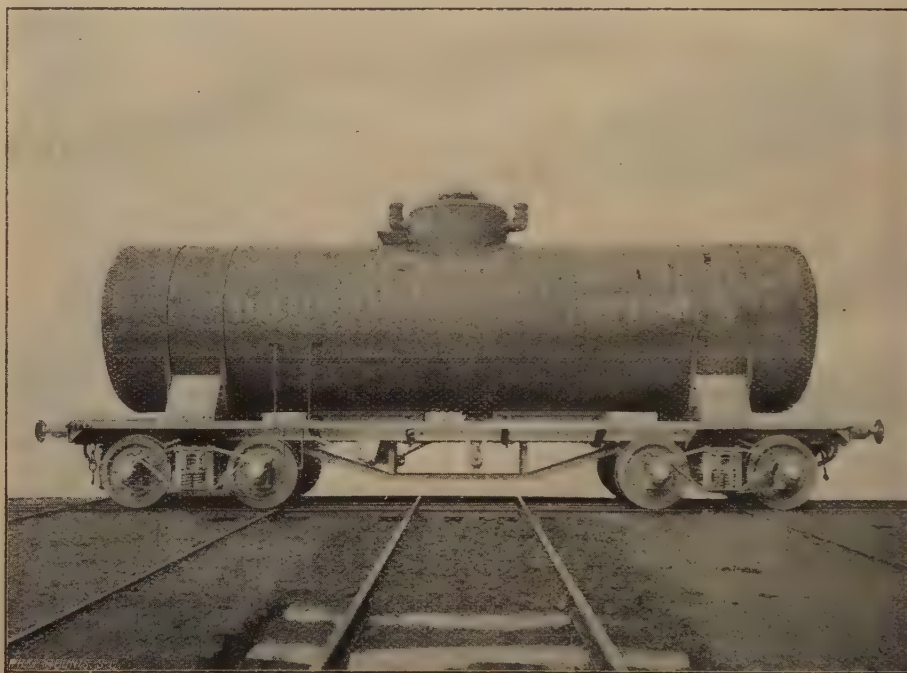
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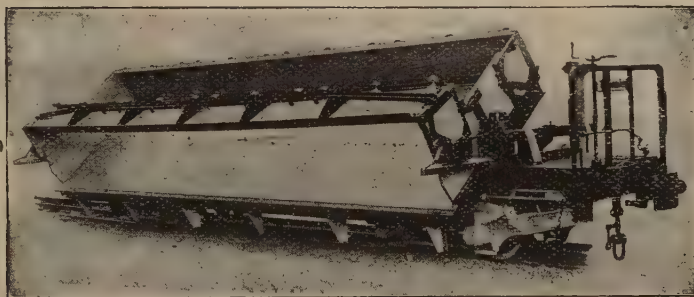
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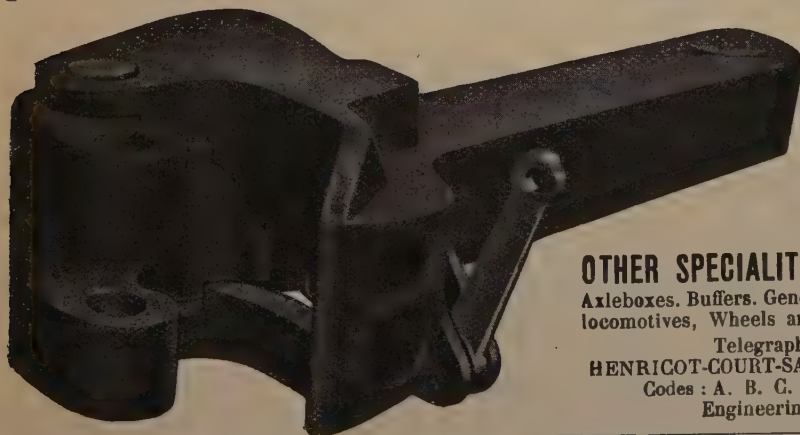
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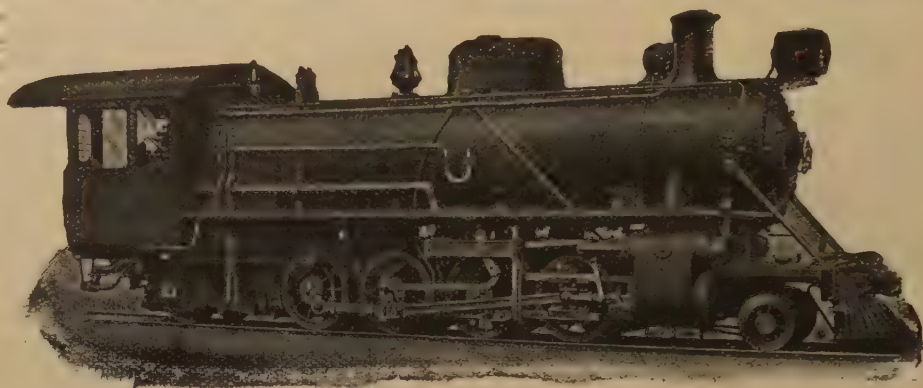


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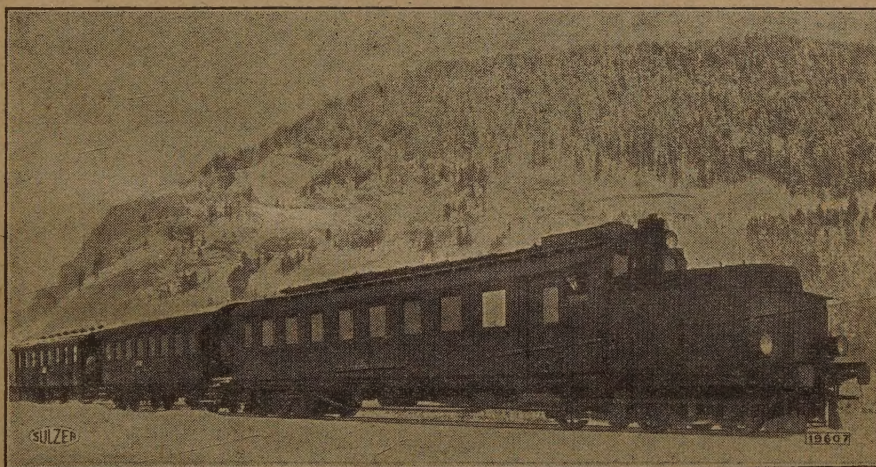
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